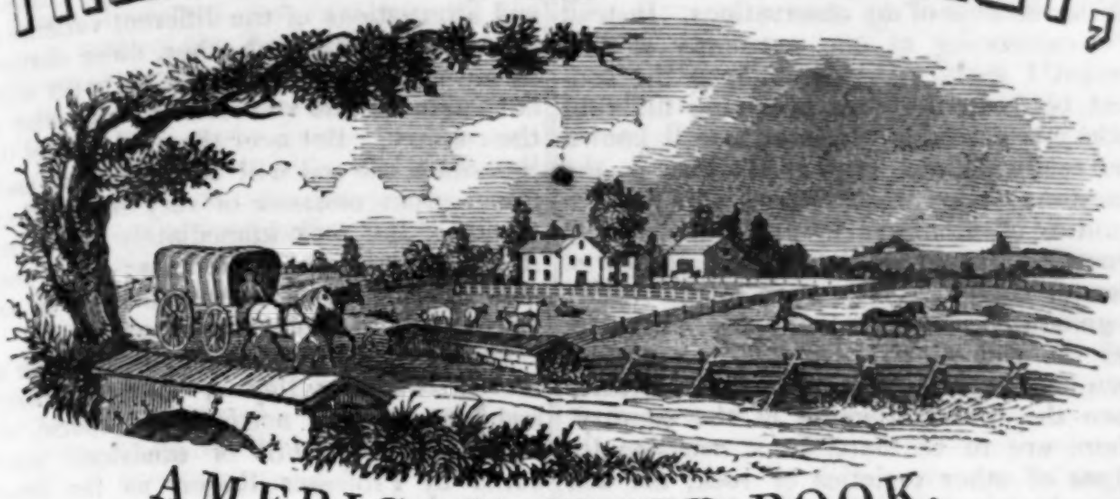
THE FARMERS' CABINET,

AND



AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

Vol. IX.—No. 5.] 12th mo. (December) 16th, 1844. [Whole No. 119.

PUBLISHED MONTHLY,

BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

No. 50 North Fourth Street,

PHILADELPHIA.

Price one dollar per year.—For conditions see last page.

For the Farmers' Cabinet.

Geology of Soils.

Continued from page 123.

MR. EDITOR,—Of the geology of Massachusetts I know nothing personally, and but little from reading; and although I have strong doubts about the correctness of Mr. Dana's description of it, yet I shall take it for granted for the present, that her soil is generally made up of "gravel, sand, clay, and rolled stones, sometimes alternately with each other, and sometimes in confused heaps; which have been derived from *places distant*, and from rocks distinct from those on which they now repose;" and that our author's doctrine, that "rocks do not influence the soil overlying them," may be true as respects that State. But while admitting this, we must remember that Massachusetts is but a small place compared with the American continent, and a very minute place as compared with the whole earth, and that what might be true there, might be wholly untrue and inapplicable elsewhere, and ought not therefore to be laid down as a general rule, but ought rather in fact to be considered as the exception, and not the rule.

That this doctrine of a general diluvial covering, "from a few inches to several hundred feet in depth," wholly influenced by the rocks which it covers, is not applicable to large districts of our country; I will now proceed to show, and also that if rocks have *not formed* the soil which covers them, they have exerted some agency, and in some instances not a slight one in determining its fertility. Or at least, that differences of soil do so certainly attend changes in the underlying rock formation, as to warrant us in assuming this to be the cause, until some more rational explanation, and one more consonant to common sense shall have been offered: and that this difference, plainly perceptible to any one who will take the trouble to make the necessary observations, may, if properly used, become an important index to the farmer in selecting land for purchase or rent. In doing this, I will in the first place describe a section of our Pennsylvania rocks, extending from the tide water region, by the way of West Chester, Reading and Pottsville, to the Alleghany mountain, which will embrace, on a line nearly at right angles with their general direction, all, or very nearly all the rock formations that are found in Pennsyl-

vania; while its easily accessible situation will enable many of your readers to verify the correctness of my observations. Instead of commencing at one extremity of this section, I shall, in order to make the contrast between the soils overlying different rocks more striking, begin at a well known and easily defined line in it; that is, the limestone valley which passes through the counties of Montgomery and Chester, and generally known as the "Great Valley of Chester county." The rock of this valley is generally a stratified primary limestone, and the soil which covers it, has always been held in high estimation for its fertility since the first settlement of the country. There are to be found in it occasionally ridges of other varieties of rock, the soil over which is generally of an inferior quality. Immediately adjoining this valley on the south, is a range of talcose-slate hills, the soil on which has been as long noted for its inferiority; this soil is made up in a great measure of very minute particles of the slate, and so unfavourable are they to fertility, that lying more elevated than the limestone, they are carried over it by torrents of water and other means, and just so far as they reach, and in proportion to the quantity transported, do they impair the fertility of the soil covering the limestone. South of the talcose-slate, there extends for several miles, in the neighbourhood of West Chester, a ledge of a variety of serpentine rock, the soil over which is so notoriously unproductive, and so incorrigibly refractory, as to have obtained the local name of the *barrens*, and the rock, that of the *barren* rock. The same kind of soil covers this rock wherever it is observed near the surface in that part of the State. Immediately south of this serpentine ledge, we come to hornblendic and gneiss rocks of several varieties, many of them in a disintegrating state, the soil over which is highly productive, and the change from one to the other is so sudden, that in many places it is not 100 yards from deplorably sterile, to highly fertile land. And this too, under a very similar general management, the whole being occupied by as industrious, intelligent and enterprising a set of farmers as can be found in any other part of the Union. Continuing our examinations southwardly, the same class of primary rocks, in all the Protean shapes for which they are so remarkable, appear to form the underlying rock of the country until they disappear under the tertiary and diluvial series of the tide-water region. Changes of soil, accompanying every important change in the underlying rock over this district, can be readily perceived by an attentive observer, although owing to the numerous windings, changes and alternations of the different varieties of these rocks with each other, these changes of soil cannot be pointed out on paper without a minute and voluminous description of the country. But over them all, except the limestone, the soil will be found to be made up in great measure of very minute fragments of the rock immediately underlying it, or of those in its vicinity; or of such substances as it is known these rocks are converted into by decomposition.

Commencing our examinations again at the limestone valley of Chester county, and pursuing a northwardly course, we first come to a hill of sandstone, considered by Professor Rogers as the lowest in our secondary series, and denominated by him No. 1. The soil on this is of a lightish colour, and is considered of an inferior quality for agricultural purposes. It is mostly kept in wood for the supply of the neighbouring farms. Next comes, in the county of Chester, a strip of primary rocks, a principal ingredient of which is feldspar. The remains of this rock, particularly the quartz parts of it, are found plentifully distributed through the soil, which is generally held in good estimation by farmers. We next pass over a formation of red shale, sandstones and conglomerates, extending to the primary rocks of the South Mountain, near Reading. The soil over these shales and sandstones, partake of the colour and materials of the underlying rock; in some places it is very fertile, in others it rises into poor, rugged and stoney hills. Opposite to these, on the eastern side of Schuylkill, we find an extensive deposit of red, or rather reddish brown, shaley sandstones, belonging to the upper secondary series, they overlay and hide from view the strip of primary rocks above mentioned. They are also protruded through in many places by hills of greenstone-trap. The soil over these shales partakes of the colour and materials of the rocks below, and is moderately fertile, while the soil covering the greenstone-trap, and immediately around it, and apparently derived from it, is so poor as not to repay the labour of cultivation, without first incurring a heavy expense in manuring and reclaiming it. Over these shales, and apparently forming the highest member of the series, a deposit of calcareous brescia is found; this is the same formation, which further westward, is called Potomac marble, and from which the pillars in the Capitol at Washington, were procured. This rock, from its heterogeneous composition, is familiarly termed *all sorts*. Adjoining this, but lying unconformably with it, is

a strip of limestone, and next succeed the primary rocks of the South mountain range, a principal ingredient in which is hornblende, in a variety of forms, from hornblende gneiss to trap. These rocks frequently rise into rugged and precipitous hills, and the country they compose is from this circumstance mostly unfit, or at least unfavourable for cultivation. I believe that the soil where tried, has generally been found poor and unproductive, although in some instances, owing no doubt to local causes, the reverse is the case. While the soil covering the adjoining strips of limestone and brescia above mentioned, is so noted for its fertility as to call forth the remarks of every passer by.

We have now passed over one division of the rocks and soils of Pennsylvania, and before entering on the next, it may be well to observe, that within it no such thing as a soil composed wholly of sand, clay, gravel, and rolled stones, brought from a great distance and dissimilar to the neighbouring rocks, exists to any great extent. Small patches may be found in the neighbourhood of streams, and of torrents from the neighbouring hills, but they are only the exception to the general rule, that the soil partakes of the nature of the underlying rock. The same remark will apply to the same range of country, if traced into the neighbouring States of New Jersey, Maryland and Virginia. Whenever we get beyond the influence of these local causes, we find the soil to partake of the colour and materials of the underlying or neighbouring rock, and changing with it. We find very fertile and very poor land lying in the same vicinity, but overlying different kinds of rock—appearances perfectly unaccountable by our author's theory, of the sameness and unity of soils.

I wish your readers, and particularly your farming readers, to bear in mind the principle I have been endeavouring to illustrate. Let them verify it by their own observations—this will require no great amount of skill or scientific knowledge, while it will yield them ample stores of amusement and information.

S. Lewis.

Pottsville, October, 1844.

The Massachusetts Premium Farm.

In 1843, the Massachusetts State Agricultural Society awarded a premium of $200 to Mr. Benjamin Poore, of West Newbury, for "the best cultivated farm" within the State. We condense the following from Mr. Poore's account of his farm, as published in the New England Farmer. The farm is known as the "Indian Hill Farm."

Number of acres.—Exclusive of woodland, salt marsh, &c., there are 121¾ acres, three of which are enclosed as a garden and nursery, and between six and seven acres planted with forest trees. There are six acres of mowing land which have not been d ained, because his neighbour, through whose land the drain would have to pass, prefers to keep his meadow in *natural grass*—leaving 86 acres, which are about equally divided into upland and meadow; the latter all reclaimed in the most permanent manner, and divided into fields, numbered from 1 to 14, which is found very convenient for reference in the journal always kept on the farm.

Nature of the soil.—The highlands are gravelly loam, resting on a clay pan, and crops are seldom injured by wet or dry weather. Of the meadows, some portion is a strong clay that would make bricks—others rich, black, alluvial soil. These were of no value till drained. It was first fenced to keep off the cattle, that they might not get mired in going on it to feed on the coarse wild grass which grew there. It is now so hard that a team may be driven over it without any difficulty. About sixteen years ago, Mr. Poore employed a Scotch farmer, whose knowledge and experience in draining, proved of much advantage.

Depth of ploughing.—The precise depth is not mentioned, and we are left a little to conjecture *how* deep Mr. Poore means when he says, "we always plough deep, and are well satisfied deep ploughing never injured *our* lands."

Kinds of crops cultivated.—About 10 acres of Indian corn and potatoes. Corn produces 72 bushels per acre. Mr. Poore thinks rye should be sown early, say in August, or late, say in October. Two bushels of rye are sown to the acre. Corn and potatoes are cultivated entirely in drills. The arguments in favour of this mode are, that less manual labour will produce a crop. A double mould board plough is used in digging potatoes. Ploughing in autumn is preferred—the earlier the better. The long barn-yard manure is used in a green state, put in the drills where the corn and potatoes are planted. When the crops are removed in autumn, the land is thrown into ridges by the double mould board plough. Spring crops are oats and barley. Wheat was formerly sown, but latter years has not produced well. The manure is chiefly used with the corn and potatoe crop, and not much on laying the land down with small

grains and grass, as it tends to produce too rank a growth of straw. If *top dressings* are used, compost is preferred. The fields are cultivated as near as possible in rotation. Made last year 363 loads, 30 cubic feet to the load, of compost manure.

Number of acres mowed for hay.—Mr. Poore mows 86 acres, commencing early in the season, as the horses are kept up all the year, and the oxen at least three quarters of the year—therefore a portion of the grass is used for soiling. Estimating the hay on hand first of August, at 500 cubic feet to the ton, at which rate it is often sold, there was on hand 157 tons.

Flooding grass lands.—Twenty acres of Timothy meadow were flowed in the winter of 1842–3. The result was an injury to the grass. The water, it is supposed, laid on too long. The experiment will be repeated—letting the water remain on only two or three days at a time.

Oats and barley.—The Scotch two rowed barley, and the Scotch potatoe oat are preferred. Three bushels of oats, and three to three and a half of barley, are sown per acre.

Laying down meadow lands to grass.—After the hay crop is taken off the land is ploughed, laying the furrows flat, and rye and grass seed sown, with a liberal top-dressing, and then rolled. A bushel, and in some cases, a bushel and a half of grass seed—kind not mentioned—is sown per acre.

Saving and making manure.—Manure is saved in every way that it can be obtained. Compost is made from the parings of the ditches, leaves, meadow-muck, &c. In addition to the ordinary means of saving the manure of the stock, a cistern for saving the urine has been constructed, and is thus described. "It is 13 feet in diameter and 15 feet deep, constructed of stone and cement; into this run the stale from the stable, ox house, cow house, and all the liquid from the cow yard, the suds and wash from the dwelling; over are the water closets of the dwelling, two in the basement, two on the ground floor, and two in the chamber; these are connected by covered passages to the dwelling; in the second story is a place for putting down loam or any material wished for compost, which we do weekly; back of the building and under the basement, is a convenient place to throw out the compost, which we do semi-annually. There is nothing offensive in the smell, and we think too high an estimate cannot be placed upon this appendage to the farm."

Live stock.—The stock kept on the farm, are six oxen, ten cows, and from four to six horses. The cattle are Durhams, "which," says Mr. Poore, "for *our* farm we think have no equal." The calves are shipped south and west when six months old, except such as are necessary to keep the stock good. The calves are generally put to drink as soon as dropped. Sometimes, when a very fine one is dropped out of season, it is allowed to run with the cow. Mr. Poore considers this an expensive mode of rearing calves, but says the prices he has often obtained, fully justify it.

No cheese is made of late years—the milk being sold, except what is wanted for family butter at the house.

Swine.—From six to fifteen, at different seasons, are kept. They are mainly supported by wash from the house and unsaleable vegetables. The manure of the horses and cattle in summer, is thrown into their yards, and they are kept well supplied with turf-parings, sods, young weeds, &c., which are often removed to the compost heap, and a fresh supply given in return.

Orchards, &c.—There are 347 apple trees, from which there were formerly made 75 barrels of cider. Recently the trees have been headed down. Of pear, peach, plum, apricot, and cherry-trees, there are 1,200 planted out at different times within the last ten years.

Labourers.—There are three departments. The farmer and three assistants, and two boys—the gardener and one assistant, and the machinist's department, which is composed of one blacksmith, one stone mason and wall builder, one wheel-wright and carpenter. They all keep separate accounts, and when one exchanges time it is repaid the same as if with a neighbour. Since 1826, Mr. Poore has had a Scotchman as foreman, and with the exception of one Dutchman and one Welchman, the labourers have all been Scotch, English, or Irish. Foreigners cannot do as much work in one day, as the Americans, but they do more work in one month, and infinitely more in a year. They are not afraid of wet or cold, and having been raised to labour, are content to labour. The foreman being a foreigner, can manage them better. They also prefer him, as they can work as they have been accustomed. Mr. Poore says, "having made a rule that when they were deserving, to provide better situations for them after they had become accustomed to the climate and manner of farming here, I can at any time, from the neighbourhoods of those who have faithfully served me, supply myself, at sixty days notice, with any number of farmers or mechanics, at the old country wages, which do not exceed upon

the average £12 per annum, for farm servants, or £20 per annum, for mechanics. In addition, board, washing, and lodging, if single—and use of cottage and garden, and one quart of milk per day, and board themselves, if married. I wish no better men than I obtain at these prices."

Barns.—The main barn is 120 feet long and 42 wide. In the basement or cellar—though mostly above ground—are horse stables, ox-house, threshing mill, cider press, hay press, and vegetable cellars, which are filled by rising hatches in the floor above. There are also two wings, 80 feet each, one of which is a cow house and a wood house in the basement or cellar—the other a piggery, and over it a carriage house, workshop, hen-house, &c. The barn is devoted to hay and straw, and all the cattle are fed, by putting hay down in the racks. The cattle are tied by chains. The floor of the cow house, ox house and stables, is of paved stone, and gutters cut from stone, lead to the cistern. The entire barn, stables, cistern, &c., were erected at an expense of $2,000. The basement is constructed entirely of stone. Split stone is used for door posts, supports in cellar, &c. The roofs are covered with tin, which Mr. Poore says costs in the first instance, one-third more than good shingles; but it has been on eleven years, and shows no signs of rust or decay.

The cow-yard, or barn-yard, is filled with mud, earth, leaves, &c., in the fall, which are put into heaps in spring, when the yard is again filled—the droppings of the cows and manure from the stables in summer, is daily put in with the hogs under cover, and removed to the compost heap every convenient opportunity, when properly worked.—*Cultivator.*

A Dog Show.

From the "Philosophy of London Life," contributed to Bently's Miscellany, we copy the following account of a singular exhibition: "A friend of ours is a dog fancier, and we accompanied him to—of all things in the world—a dog show. We have heard of agricultural shows, horticultural shows, tulip shows, dahlia shows, and fifty other shows, but we never dreamt of a dog show. However, there it was on a printed paper, pulled by our friend out of his waistcoat pocket, in black and white, with a long list of presidents, vice-presidents, secretaries, treasurer, committee men, judges, conditions, prizes, &c. On entering the show room, whose proximity was audibly made known to us by the reiterated barking of the competitors, and the howling which followed the application of the whips of their owners, we could hardly avoid laughing, not less at the assembled bipeds who filled the room to a crowd, than at their quadrupedal friends upon the table. One old gentleman, with a white waistcoat and black silk smalls, relieved by a huge bunch of gold seals depending from the most prominent part of his person, held a pug under each arm, whilst he criticised the points of a remarkably beautiful little terrier then upon the table. A tall thin, sickly-looking man, who, as I was informed, was a peer of the realm, was busily engaged in discussing the comparative beauties of a black and tan, and a red and white spaniel of the King Charles' breed, who to do them no less than justice, appeared to enter completely into the spirit of the thing, and growled, and barked, and flashed fire at each other from their large, round, antelope eyes, with all the apparent jealousy of two contending beauties at an assize ball. Running about our feet were all sorts and sizes of the canine race; bloodhounds, Irish grey-hounds, terriers, wiry and short-haired, silky-legged spaniels, but not a cur of low degree; all had their pedigrees, and well attested certificates approved their honourable birth.

Notwithstanding the ludicrous nature—to us, at least—of the exhibition, not a muscle, either of the dogs or their generous protectors, was discomposed! all was conducted in a business-like English manner, with true John Bullish gravity and decorum; nor, when a very fat man, with a red carbuncled nose, discovering a quart pot, which he had hitherto concealed with a silk handkerchief, placed on the table, with a little stunted dog peering out, was there a single countenance in the room irresistibly disposed to laughter, save our own. The little stunted dog himself, to all appearance a puppy of three weeks old, but who was, in fact, arrived at the respectable age of two years, having recovered his liberty, scrambled over the edge of the quart pot, and with great gravity waddled round the table, paying his respects as he went to other little stunted dogs, who, however, not being quite so stunted as himself, appeared to regard him with no great cordiality.—*Temperance Advocate.*

Sore Backs or Galls on Horses.—Rub white lead in sweet oil until a good paint is made, and apply a coating of this to the injured place. Milk will do where no oil is to be had. It is one of the most effective applications. Some for the same difficulty use a solution of vitriol in water; but in most cases, the white lead is preferred.

Landlord and Tenant.

The holdings of many of the Scotch farmers are very large; and their farms are generally held under leases of nineteen and twenty-one years.

I shall perhaps excite some surprise in stating my belief, that the manner in which farms are held here on hire for a year, or on lease for a term of years, rather than being owned by the occupants, is itself a powerful instrument or incentive to agricultural improvement. In the United States, where farms are owned by the occupant, the farmer seldom keeps any account, and it matters not much to him what is the result of the year's management. The effect of this is to render a man negligent and indifferent to success or loss. But when at the end of every six months, the rent must be paid, it is not a matter of indifference whether his farming turns out well or ill; for not only the labour employed is to be paid for, but the rent of the farm must be punctually discharged. This consequently compels him to make every exertion by which he may be assisted to meet his obligations, he finds no room for idleness or neglect; and the continuance of his possession depends upon his good management and the punctual payment of the rent. This prompts to watchfulness, skill, experiment, and improvement; and especially it gives to farming a commercial or mercantile character, and obliges the farmer to keep accounts, and so to learn the exact pecuniary result of his operations—a matter in which the farmers of the United States, as far as my observation goes, who are the owners of the farms which they occupy, are almost universally deficient. The strict responsibility to which the farmers are here held by their landlords, is undoubtedly a material element in their success. At the same time, where the occupation is from year to year, and leases are refused on the part of the landlords, as is generally the case in England—though in Scotland leases are almost universal—the effect must be to prevent or discourage substantial improvements, as few persons will be inclined to make such improvements with an uncertainty of continuance. It is a fact, however, which may create some surprise, that many farmers are unwilling to take leases when landlords would be willing to grant them. But this happens only when there is a perfect confidence on both sides; the tenant has entire reliance upon the honour and liberality of the landlord, and the landlord is equally confident of the good conduct and management of his tenant. An excellent landlord in Lincolnshire, says he considers himself bound to continue his old tenants and their children in possession, in preference to any other tenant, as long as they choose to remain, unless some extraordinary contingency presents itself; and virtually admits on their part a property in the soil. The great length of time during which families on his estates have held their possessions from father to son, shows that he acts upon the most liberal principles; and the condition of his tenants and their great improvements, evince that his honourable conduct secures their entire confidence. It cannot be doubted, however, that the uncertainty of continuance, the absolute power of discharge on the part of the landlord, the risk of his caprice, and the possibility of a new one coming in possession, must have some effect in preventing or discouraging improvements.—*Colman's Tour.*

Hints to Young Men.

"Who aims at excellence will be above mediocrity; who aims at mediocrity will fall short of it."

Be industrious. We do not mean here the industry of the hands alone; but that perseverance in whatever we undertake, that is the secure precursor of ultimate success. Never allow the mind or the body to stagnate; activity is necessary to the health of both. Always have some worthy end in view, in whatever you undertake; remembering that to fail with good intentions, is more honourable than success in an evil cause.

Cultivate your mind. It is of more importance to the young, that their reading should be select, rather than extensive. One volume well understood, on any important topic, is better than half a dozen merely skimmed. There are many subjects of general utility, with which every man should have a partial knowledge at least; but it is one of the great faults of modern education to spend too much time on studies that rather burden and clog the mind, than strengthen and inform it for life's practical duties. Reading, or studying without some definite aim, is likely to lead to few useful results. How many men there are who have spent a large part of their lives over books, of whom it may be said, "they remember a mass of things, but nothing distinctly." It is possible to cram the mind with masses of indigestible materials, destructive alike to a healthy and a vigorous action of the intellectual powers. Such is not the cultivation of the mind required by a young American farmer.

Be economical. No matter if your pa-

rents are worth millions, it is not the less proper that you should understand the value of money, and the honest, honourable means of acquiring it. What multitudes of young men, particularly in our cities, make fatal shipwreck of reputation, health, and eventually of property, by a neglect of this simple maxim. They are aware that their fathers obtained their wealth by habits of industry, but they are ashamed of the very name. They forget that wealth in this country passes rapidly from one to another, and that he who is rich to-day may be poor to-morrow; or that he who relies on wealth amassed by his father, may end his days in a poor-house. It is for the young here to say whether by industry and economy he will secure competence and respectability, or by extravagance and idleness become a worthless beggar and sponging outcast.

Shun avarice. One of the most disagreeable characters on earth, is that of the grasping, avaricious, penurious man. Generosity is perfectly compatible with economy; and the means which enable some of our most noble hearted, generous men, to do so much to benefit and bless mankind, are obtained, not by closefisted penuriousness, but by economy. The distance is not greater between the zenith and the nadir, than between the covetous and economical man: the first banishes every just and honourable feeling from the heart, the other fosters and ministers to them all.

Determine to be useful. No matter what may be your condition in life, you have an influence, and that influence should always be exerted in a proper way. The young have no right to fold up their arms, bury their talent, and become the drones of the social hive. Aim high, but with prudence; act with determination and perseverance; let no obstacle drive you from the path of honour and duty, and you may be sure of eventual success. Riches are not within the reach of all: competence is; and the latter condition is preferable in every respect to the first. Remember the Deity helps those who help themselves, and that utility is the great end of human exertion. *Boston Cultivator.*

For the Farmers' Cabinet.

Drilling Wheat.

To the Editor,—I am aware that the period for putting in wheat is for this season gone by, and with it, apparently, the proper time for a discussion of its manner: but let it be remembered, that general principles may at any time be inculcated, and the observant man will not suffer the subject to pass so transiently over his mind, as to leave no impression to be recalled when the moment for action may have arrived. I was particularly interested in the statements of Dr. Noble in the last Cabinet, respecting his experiments in drilling wheat. If by this process the crop may be increased 27 per cent., it appears to me it would be well to inquire, if it does not behove us to leave the old track and adopt another.

My main object in asking a nook in the Cabinet at present, was to refer to a paragraph or two in Colman's second Report, on European Agriculture, now lately published, part of which has reference to the putting in of wheat by the drill. In passing, suffer me to express an opinion that one cannot read these Reports, so far as they have been given to the public, without feeling sensible of their great value and practical importance, and I trust many readers of the Cabinet will possess themselves of them. He gives several statements drawn from Parliamentary reports, of persons who, from three or four, or five acres of land, for which too they pay a rent of £4 or £5 per acre, manage to support their families of five or six persons, comfortably, and lay by a little for a *rainy* day.

The example of J. Piper, of Sussex, "shows the extraordinary results of minute and exact cultivation, and the value of economy in husbanding with extreme care, all the resources for manure." From four acres in 1842, he obtained produce valued at more than £61, or say $300. To wit:

42 bush. of wheat, at 7*s.* 6*d.* per bush.	£15	15*s*	0*d*
250 do. potatoes, at 15*d.* per bush.	15	12	6
Food for 2 cows, which gave each 4 lbs. butter per week, at 1*s.* per lb.	20	0	0
Food for 3 pigs, at 20 stone each, and at 3*s* 6*d* per stone,	10	10	0
	£61	17*s*	6*d*

One of the peculiarities in this man's management is, that he works one of his cows in his cart, and estimates that her labour saves him an expense of £5 a year. "She is milked in the morning before she is put to work, and although worked, she makes eight lbs. of butter a week, besides furnishing some milk for the family." And why, pray, should she not be worked? As our author justly observes, "it would not be easy to find a reason why the female of one class of animals should be exempted from labour rather than another."

A second person, J. Dumbrell, from three acres and a quarter, in 1841, gathered,

Wheat, 21½ bushels, at 8*s* per bushel,	£8	12*s*	0*d*
Oats, 44 bushels, at 2*s* 9*d* per do.	6	1	0
Potatoes, 80 bushels, at 1*s* per do.	4	0	0
Two calves, sold for	5	10	0
Butter, 423½ lbs. at 1*s* per lb.	21	3	3
Milk sold and given to the pigs,	10	0	0
	£55	6*s*	3*d*

Or about $265: on this he maintained his family of five persons. His stock consisted of two cows and a heifer, and from two to three pigs. "If," says he, "you are surprised at my keeping two cows on this quantity of land, I must tell you that one crop a year will not do it: but my plan is to take second crops; that is, rye is the first thing I cut green in the spring; then I dig the land and manure it with the liquid manure, as far as it will go; then finish with rotten dung, and plant mangel-wurzel and turnips; and the part that I manure with the *liquid* is always the *best*. The next thing I cut is winter barley and turnips, and plant some cabbages for winter: by this time I cut the grass and clover, which grows again in a short time, with a little of the liquid manure as soon as it is cut. Last summer I cut the Italian rye-grass and clover three times; and this year I have nearly cut it twice already, and there were really two good crops of the Italian rye-grass, and I think there will be two more this summer, with a little manuring. My early cabbages I always let stand to grow again all the summer, and they bring a great deal of food. I plant again in November, and put the liquid manure to them as far as it will go; but to the rest I use dung or ashes, which are not so good as the liquid, which any body may tell in the spring by looking at the bed of cabbages; so I hope it now appears how the cows are maintained in winter as well as in summer. During last winter, I had no hay, only turnips, mangel-wurzel, and straw, and they did very well."

We may all do well to remember, that the utmost productiveness "of an acre of land in any crop, has not yet been fully determined. The amounts attained frequently surprise us," but where is the farmer who can say, my land will yield no more?

H. Colman says, that his attention was strongly attracted in Sussex, by two small pieces of wheat in a garden by the road side, exhibiting an extraordinary luxuriance, and on inquiring minutely into the mode of culture, yield, &c., he found that "the seed was brought from Australia, being the product of some wheat which had been sent there two or three years before. The quantity of land sown, in one of the pieces, was thirty-four square yards. The wheat was dropped in rows nine inches apart, and in holes six inches apart, and only one grain in a place. The number of corns planted was 682, out of which 33 failed to germinate. The cultivator obtained four gallons of good wheat from the land, exclusive of several of the finest plants, which he saved. The usual number of stems from each seed was 18 to 20; a considerable number gave 30 to 35, and one was counted which had 40 full sized stems, and three of a smaller size. The straw from the 34 yards weighed 72 pounds, which would be 284 trusses of 36 pounds to the acre. The weight of the 682 corns planted was 17 drachms. This being multiplied by 142, the land being the 1-142d part of an acre, gave about 9¼ pounds as seed for the acre; consequently one bushel of wheat, at 63 pounds per bushel, would plant more than six acres. The produce of 4 gallons, multiplied, as above, by 142, gives the great quantity of 71 bushels, or 17 sacks 3 bushels, to the acre. The ground had borne potatoes the previous year, and had received no top-dressing, nor been in any way manured for the wheat."

"These," it may well be said, "are remarkable facts. What has been done can be done again." "Onward is the watch-word of the present day, in every department of science and art; why should agriculture form an exception?" But I must close my rambling. The cases given, will, I think, not only create a desire to read the excellent work which furnishes them, but go a great way toward showing the superior excellency of the *spade* and *drill* husbandry.

P. R.

Extracts from the Address of Samuel D. Ingham,

Delivered at the Stated meeting of the Bucks County Agricultural Society, at Newtown, the 24th of Tenth month last.

Agricultural industry lies at the foundation, and is in fact, the main instrument by which the whole structure of civilized society is erected.

In this pursuit, so essential to human existence, a great variety of auxiliary arts are necessarily sought out, which lead on from one invention to another, until the three great pillars of the social fabric—agriculture, manufactures and commerce—are indissolubly united together in one common bond of interest.

Hence it is, that our theme presents such a formidable array of matter, so difficult to comprehend and so impossible to condense into any reasonable compass for an Address. By your permission I will take the occasion

to suggest what appears to be a desirable plan for collecting information. It is in this as in every department of human occupation, power is vastly increased by a division of labour. Every person engaged in farming for a few years only, must have ascertained many facts worthy of being promulgated, and where each member of a numerous Society may bring the experience and observation of his whole life into the common stock, the collection will be more valuable than a thousand general addresses, gliding, as they necessarily must, over the surface.

The essential business of such a Society, is for each member to impart and receive information—and if each would voluntarily or in conformity with some regulation to that effect,—communicate such facts and observations as may have attracted his notice as worthy of attention; the mass of valuable instruction thus obtained, would not only be highly beneficial to us individually, but excite a deep interest in our labours wherever they were known. In an association of farmers, there is of course a variety of knowledge; few topics can be suggested appertaining to agriculture, in which more or less information is not possessed by some of them, and nothing is wanting but the disposition of each individual to impart freely whatever he may deem useful; and to appreciate fairly the contributions of others. There are also other sources from which valuable essays may be prepared. A variety of books have been written on agriculture, which, including the popular periodicals of the present day, contain extensive collections of useful matter; many of these works have no doubt come under your notice; the experience of a practical farmer will enable him to separate the chaff from the wheat, and he may render as valuable a service to the Society by pointing out the errors, as by establishing and circulating the truths contained in such works. I would therefore, like to see an Address at least once a year, if not oftener, from some member specially appointed, for which he might select the general subject or some particular branch of it, and also a communication from each member, on any topic he might deem most useful or feel best able to throw light upon. The field which may be thus cultivated is virtually of unlimited extent. It includes the whole theory and practice of husbandry, and all the auxiliary arts, not only the preparation of the earth for the various crops—the manufacture and composition of manures—the adaptation of the crops to their appropriate soils—the proper season for planting—the introduction of new varieties of seeds—their acclimation in different latitudes—the implements for tilling the earth, harvesting its productions, and their preparation for provender—feeding and fattening animals—the selection of the best breeds of horses, cattle, sheep, swine and poultry—the management of the dairy, and all matters immediately belonging to the farmer's cares and duties. But there is a great variety of incidental subjects, which are scarcely less important; among these are the diseases and treatment of domestic animals—the nature and habits of all the vermin and insects which infest either animal or vegetable life. Those of the birds and reptiles which prey upon these noxious insects and aid us in their destruction; the character of all the plants of the earth, suited for the use of man or beast, and also of those which are noxious. In short, we want to know the best means of increasing, improving and protecting all the productions of nature, best suited to supply the wants and promote the comfort and happiness of man. There is no limit to such investigations, and our progress will be very slow, unless each one of us will come forward and contribute from his store of experience to the common stock. In pressing this subject on your attention, I am aware of the only real obstacle to its favourable consideration. There are many good farmers who are little accustomed to putting their thoughts on paper, for the public eye. As it will be a serious loss to be deprived of all the experiments of such persons, let us endeavour to remove this obstacle. The object we are in pursuit of is information. The dress or style in which it may be communicated is of no importance; many wise men and profound thinkers have been obliged to employ their amanuenses to put their ideas in form; and on the other hand there are not a few very correct writers, who seldom compose from their own thoughts. It is no disparagement to the understanding of any person that he cannot write well; none should therefore be deterred from contributing whatever he considers useful, on account of his unpractised pen.

* * * * * * * *

It is worthy of experiment to ascertain from what climate and soil we might most advantageously procure seed wheat for the best change, also other grains. So much has been accomplished in the vegetable and animal kingdoms, by breeding from the best, that it would be well worth our attention to select every year a number of the best and ripest heads of wheat, most free from rust, and continue the propagation from these and the like, for the supply of our entire seed. Most of you have heard of the remarkable

success of Mr. Baden, in Maryland, who commenced his improvement in corn, by planting only from the stalks which bore two or more ears: he states that he scarcely perceived any difference for the first four or five years; but afterwards it increased rapidly, until his corn averaged throughout more than two ears to the stalk, some bearing many more. I saw two stalks from his farm, at the Patent Office in Washington, in 1837, one of which had seven, the other ten ears; they were not large, but well filled. I bought some seed, but it was acclimated too far South for this latitude; there were two or more ears on most of the stalks, but they did not ripen well. The valuable labours of Mr. Baden were lost to Pennsylvania, but his corn is extensively cultivated in the West. How easy would it be for every farmer to follow his example? Potatoes may be improved by the same means. The largest potatoes have attained their growth quickest, and should be used for seed; we might thus obtain not only a larger but an earlier potatoe; instead of suffering the degeneracy, which must follow from using the smallest, latest, and most imperfect roots for seed.

After the conclusion of the Address, the following Resolutions, as we learn from the *Newtown Journal*, was offered, and unanimously adopted.

That the members of this Society will for their mutual benefit, strive to avail themselves as far as practicable, of the advantage of each others experience in relation to all matters appertaining to the business of farming, by presenting from time to time, statements in detail of their individual practice and its results—embracing the time and depth of ploughing, carefully noting the quality and condition of the soil. The effects of lime in comparison with the quantities used, the time and manner of its application, and all other conditions which may have combined to produce any particular result—the preservation, preparation, and application of barn-yard manure. The effects of poudrette, guano, ashes, bone-dust, &c., relative advantage of different systems of rotation in cropping. The management of orchards, and the cultivation of all kinds of fruit. The arrangement of buildings, with an eye to economy and convenience. Loss or gain in dividing the farm into small enclosures, for the purpose of grazing in comparison with soiling or confining the stock to one lot. Plans of preserving fences and the relative expense and value of different kinds of fencing. The comparative importance of different agricultural implements. The productiveness of different kinds of grain, grass, fruits, roots, and stock—management and improvement of stock, selections of seeds and management of crops. Including in short, every observation and experiment which may promise to introduce any improvement in the management of any branch of agricultural industry and economy.

Application of Steam to Agriculture.

There is, indeed, one giant power, of comparatively modern invention, which, it is thought, has not been as successfully or extensively applied in agriculture, as in some other departments of the arts. Every one knows, at once, that I refer to the power of steam, which seems, wherever introduced, to defy all competition; and every day's experience appears to demonstrate that its extent is yet hardly conceived, and its application only begun. The experiments, which have been made in the application of steam power to the movement of ploughs, have not, as far as I can learn, been attended with success. It will not be safe to assert that this cannot be done to advantage; but certainly that is not the only application of steam to the purposes of agriculture, which is to be looked for. Indeed, besides the impossibility of an art, so intimately associated as agriculture is with almost all the practical arts of life, escaping its share of the general advantages which the community is enjoying from this mighty agent, it has already received many direct contributions from it. In the Lothians of Scotland, those beautifully cultivated grain districts, which, when seen in the season of their glory, with their green and their golden crops, so rich and delightful as to make the heart of an enthusiastic agriculturist beat as though he himself had a steam engine under his waistcoat, a steam engine is to be found on every principal farm, for threshing out all the grain, and for other economical purposes, to which, on a great farm, these engines are capable of being applied. The average size of these engines for threshing, is from a six to an eight horse power, and the cost, which was formerly more than £120, or $600, is now greatly reduced.

The advantage of steam, as a motive power, must be obvious. It is always available, at all seasons, and without reference to the weather. Its movements are uniform; whereas horse power is, to a degree, capricious and unsteady, and horses often suffer a great deal, both from too constant and long continued pulls, and likewise from frequent stops and starts. The steam power never tires, and its operation may be con-

tinued to any length of time or quantity. These are all great advantages, especially when a farmer, from any sudden advance, wishes to bring his grain at once into the market. It is obvious, at the same time, what advantages he has in having his horses saved from the severe work of threshing, and fresh for other farm work. The saving of a pair of horses, on a farm, is estimated at £100 per year,—very much more, indeed, than it would be with us; and intelligent farmers assert "that, with steam power, they save one-fourth of the horse power on large farms."

The usual quantity of grain threshed by a six-horse steam power, is at the rate of from 30 to 40 bushels per hour; though the quantity must vary with the condition of the grain and the straw. The average work of a threshing mill, driven by horse power, is 150 bushels per day, and by steam power may be reckoned at 250 bushels per day, which is certainly a great preponderance in favour of the steam power. The wear and deterioration of the horses, and the expenses of keeping them, are most important considerations to a farmer. Indeed, so far as my observation goes, there is no single source of expense, none which abstracts so much from the profits of farming, and none of which the farmers in general are so little aware, as that of horse teams.

In the great experiment, or rather improvement, going on at Hatfield Chase, in Yorkshire, of emptying the deserted bed of a river, and spreading this rich alluvion over a peat bog, the earth carts are moved on a temporary railway by a steam engine, and carried to their place of deposit, so that, as I have before remarked, five acres can be covered in a day, eight inches deep; and that which it would be perfectly in vain for any inferior power to have attempted, is accomplished with perfect ease by this willing but mighty agent. The fens in Lincolnshire, where the uncertain and capricious power of the wind was formerly depended on, and, of course, with little confidence and uncertain results, are now relieved, at pleasure, of their surplus water, by two steam engines, one of 60 and one of 80 horse power; and the quantity of water removed, the time required, and the expense incurred for doing it, are all matters of exact calculation. The workmanship of these engines —for I have had the pleasure of visiting the spot—is extremely beautiful; and the advantages of the whole arrangement can hardly be overstated. I can easily believe that the same machinery, on a small scale, may be applied in many other similar cases; and a very intelligent and spirited farmer consulted me on the subject of his determination to erect a small steam engine, at his own expense, for the purpose of draining a part of his own premises. At the show at Derby, there was exhibited a movable steam engine, intended to be carried to a farmer's premises, as it might be wanted, for furnishing a threshing power, and other purposes. I have not yet learnt how it succeeds; but if success is not attained at a first attempt, it is ultimately certain. These machines are made of two, four, and six-horse power. The cost of the two-horse power is £80, or $400, and a three-horse power, £110. This does not include the threshing machine. A fixed steam power must have many advantages over a movable steam machine. It is never safe to calculate upon doing a great many things with any single machine. A self-directing machine would be a great discovery; but, short of man himself, we can hardly look for that, though it seems sometimes to be nearly approached. A great difficulty, in many cases, is, that the machinery must be trusted to the hands of the stupid, careless, and sometimes malignant. —*Colman's Agricultural Tour.*

Extracts from an Address

Delivered before the Housatonic Agricultural Society, Mass., on the 26th of Ninth month last, by Caleb N. Bement, editor of the New York Farmer.

To be successful in farming, the mind should be devoted to the business. That man who is above his business is in danger of soon finding that he has got below it. The farmer who devotes his mind and his energies to his farm, till it is so far improved that it elevates him above the necessity of constant labour, is the most independent and enviable character in our country; free from the responsibility of office and the toils and cares of a profession, he eats the fruits he has reared with more zest than can be realised by any other class. A good farm, covered with flocks and herds, and fruits, is a truly enviable possession, and like Selkirk, the farmer is often "Monarch of what he surveys."

The well cultivated field is the field of the farmer's glory; his highest ambition to improve it; if he has doubled the produce of his farm, he feels that he has achieved a nobler victory than if he had conquered armies or subdued empires.

Some experience and much observation have convinced me, that one of the most common errors in which our farmers have fallen, is in neglecting their young stock. Many farmers are in the practice of turning

off their young stock on the poorest food. This is not right; for if ever animals require the best of food and plenty of it, it is when they are young and growing. They will not grow into good shape or size if half starved or stinted of their food. I have heard some farmers boast of the small quantity of food on which they have carried their stock through the winter. Our pride would be to see how well we could carry them through the winter. "An animal well wintered is half summered." One good cow full fed, is worth more than three half starved ones; I am aware that high feeding of milk cows on grain, is not generally believed to be profitable, but I am satisfied that by feeding them on roots in the winter, the cows would give milk nearly the whole year, and their calves would be much more valuable.

If cows are ever allowed to fall very low during winter, in vain shall we hope to obtain an abundant supply of milk by bringing them into high condition in the summer; for if a cow be lean at the time of calving, no management afterwards will ever bring her to yield for that season, any thing like the quantity of milk that she would have done, had she been all the winter in a high condition.

The immense importance of providing for cows a full supply of rich and succulent food, and such as they relish, to the extent of their appetite, has been demonstrated by many examples of very large products of milk, butter and cheese, from cows so supplied. The following statement from an English publication, is a further illustration of the fact. "A farmer some years since, kept *eighteen* cows upon a *common*, and was often obliged to buy butter for his family. The common was *enclosed*,—which deprived the farmer of his pasture—and the same person supplied his family amply with milk and butter from *four* cows *well kept*."

Draining, Irrigation and Warping.

Much of what has been done is entirely out of sight; whole fields, thousands and thousands of acres of land, have been underdrained by pipes and channels, spreading themselves like beautiful net-work under the surface, taking off all the surplus moisture, and converting cold, unfruitful, and unsightly morasses into productive and beautiful fields. It would be curious, if it were possible, to approximate the amount of this work which has been done; but there are no means even of framing a reasonable conjecture. It undoubtedly embraces hundreds of thousands of acres, and much more is in progress, since, important and indispensable as moisture is to vegetation, nothing can be more prejudicial than a superabundance of water, and especially stagnant water. Of the different modes of draining I shall speak hereafter at large. It is a subject of great importance and utility, and requires to be treated in the fullest and most exact manner. The next great improvement that I have witnessed in England, is in the fen-country of Lincolnshire and Cambridgeshire, where vast territories, embracing many thousands of acres, have been, it may almost be said, created, that is, redeemed from the sea, fortified by strong and extensive embankments, and now rendered as fertile and productive as any lands which can be found upon the island. These lands, likewise, are kept drained by immense steam engines, which move with an untiring power, and accomplish this mighty work with ease. In other cases, in Lincolnshire, another process is going on, here denominated *warping*, by which, on the banks of the Humber, immense tracts are enclosed, the tide shut in, and compelled to leave its rich deposit, thus forming, likewise, the richest meadows. Still another process is in progress, by which the crooked course of a river is straightened, its channel deepened by its own new current, and rendered navigable, and, by the erection of artificial banks, the soil within them continually raised, and hundreds of acres, where so recently the fish, at high water, sported with impunity, are rescued from the sea, and covered with thriving flocks of cattle and sheep. In Yorkshire, not only are various processes of redeeming and improving land going on, but the curious process of removing, by the aid of steam machinery, the rich deposit from the bed of a river, whose current has been diverted from its natural course; and this deposit, after being taken out, is laid, at not an inordinate expense, on a peat bog hitherto unproductive and worthless. By judicious management, it is spread on the land to the depth of eight inches, and the covering proceeds at the rate of five acres per day. In Nottinghamshire, a most splendid improvement has been effected in turning the course of a small river, so as at pleasure to irrigate several hundred acres of land, which were formerly poor and comparatively unproductive, but now yield the most abundant crops; and in Staffordshire, the same results have been reached, not by a river, but by collecting the springs, and forming a grand reservoir, from which the water is carried over extensive fields, which are thus irrigated at pleasure.—*Colman's Agricultural Tour.*

Extracts from J. S. Skinner's Address,

Delivered before the Agricultural Society of New Castle Co., Del., at the annual meeting, held Sept. 11th, 1844.

The journals especially dedicated to the subject, have so thoroughly aroused the public mind, that it were worse than idle to dwell on the dignity or usefulness of a pursuit, which yields to civilized nations their chief means of subsistence. The estimation of its importance everywhere rises with the progress of intellectual and social improvement. So may it rise higher and yet higher! For, talk as we may of advances in other departments of art and industry—of rail-roads over mountain and valley—of steam to traverse the "deep waters of the dark blue sea"—of telegraphic correspondence as quick as thought itself—what would be the practical value of all these, were it not for the strong arm and skill of the husbandman, to bring forth the resources which lie dormant in the bosom of the earth, or appear upon its surface, inviting the meliorating influence of his ingenuity and diligence? In lieu then of asserting the self-evident claim of agriculturists to precedence in the scale of social and political influence, rather let the inquiry be, why they have been content, as well in the States as in the General Government, to leave the great business of legislation, on the wisdom of which the morals and the happiness of States so much depend, almost exclusively in the hands of different, if not antagonist classes?

If "the husbandman that laboureth shall be the first partaker of the fruit," should not his class, which constitutes the main strength of the nation, assert its right to a proportionate share in the direction of the Government? On this subject we may aptly remember the account of the great historian of antiquity, who relates how the Ionians were once visited with new calamities from Miletus and from Naxos. Of all the islands Naxos was the happiest, but Miletus was at that time in the height of its prosperity. In the two preceding ages it had been considerably weakened by internal factions, but its tranquillity was finally restored by the interposition of Parians, whom the Milesians had preferred on this occasion to all others, and who, being called on for their good offices, applied the following remedy: They sent as ambassadors men of the highest distinction, who, perceiving on their arrival at Miletus, that the whole State was involved in extreme confusion, desired permission to examine the internal condition of their territories; and whenever, in their progress through this desolate country, they observed a farm *well cultivated*, they wrote down the name of the owner. In the whole district, however, they found but few estates so managed. Returning to Miletus, they called an assembly of the people, and placed the direction of affairs in the hands of those who had best cultivated their lands, for they concluded that they would be most watchful of the public interest who had taken the best care of their own. They enjoined all the Milesians who had before been turbulent and factious to obey these successful farmers, and the general tranquillity was speedily restored.

These, my friends, were in all probability educated men, who, disgusted with the corruption of trading politicians and the sway of impious men, had withdrawn from public affairs to find quiet, if not consolation on their own well managed farms. But look at our legislative assemblies, and all our public trusts, and mark in what small proportion those who fill them are usually taken from the ranks of practical husbandmen, and this is more especially the case where education is the least diffused. Is it not time then to look at the effects on the landed interest, of neglecting the mental culture of those who are designed for the cultivation of the soil? Understand me not as meaning to derogate from the character of other classes. On the contrary, there seems to be something in the moral training of learned professions, which at once enlightens and liberalizes the mind and the heart. It is indeed the natural influence of knowledge to extinguish all the meaner passions of the soul, and to animate it with noble purposes, just as thorough draining and good tillage sweeten wet and sour land; and thus it is, that among the most enlightened citizens of all classes, liberty has, in all her struggles, found her most ardent, though too often ill-fated defenders. I would even invite you, farmers of Delaware, to unite with me in denouncing that overweening jealousy, the growth of narrow and vulgar minds, which too often leads the tiller of the soil to look on the manufacturing and mercantile classes as on hostile sects, ever on the watch to overreach and betray the farmer. Far different are the ends and offices of domestic manufactures and commerce, in respect of the landed interest, when all their relations are fairly appreciated. It is the interest of the farmer that these other communities should become in his vicinity as numerous as the sands on the sea-shore. Dense populations naturally lead to the division of labour, and thereby, under the protection of wise and stable legislation, to the multipli-

cation of trade, the perfection of the arts, the creation of wealth, and with it, innumerable artificial wants, which it is the business and the benefit of your pursuit to supply. "To fix the happiness and virtue of a nation on a solid foundation," says a celebrated philosopher, "they must rest on a reciprocal dependence between all the orders of citizens." While then every farmer should himself take especial care that as far as it may be practicable, he is not encumbered with a single idle mouth—of man, woman, or child, bird or beast—with not one consuming non-producer on his own estate—while, as with some economical people, even every cow should be kept at the yoke or the pail, let him rejoice that the consumers beyond his estate should prosper beyond measure in variety of employments, in numbers and in wealth. Yet there are moral incendiaries, from which no country is exempt, whose business it is to inflame one class against another—the farmer against the merchant, the artizan against the man of science, the poor against the rich; not stopping or caring to reflect, that when, by the base arts of the demagogue, the honest avails of diligence and talents shall have been put in continual jeopardy, the mainspring of all social melioration will have been broken, and society turned back on that dreadful march, which leads again to all the crime and anarchy which invariably follow in the train of unrestrained ignorance and selfishness. But, essential to the common prosperity of a people as are the existence and the success of the numerous classes to which the industry, the wealth, and the wants of dense populations give rise, it does not follow that any one of the classes, and especially the most numerous and productive, as is the agricultural in our country, should surrender to lawyers and men of other professions, its own right and obligation to take their full share in the enactment and execution of the laws. Far be it from me to encourage among farmers a grovelling thirst for office, either to gratify a vain ambition for a little brief authority, or as the precarious means of livelihood, so little to be coveted in comparison with the humblest subsistence acquired by the independent exercise of individual abilities; but what I do mean to insist on is, that until we have "angels in the shape of men to govern us," farmers should never rest satisfied, until they shall have established a system of education which shall qualify their sons to prosecute their particular avocation with a knowledge of the *principles* that essentially belong to it; and that shall at the same time endow them with capacity to perform that most important of all duties, the making of their own laws. Let it not be said or supposed, that this subject has no connexion with practical agriculture, and that no real evil has resulted from this ignoble surrender to other classes of all the business of government; for it never yet happened, where classes or individuals habitually resigned to the hands of agents the entire management of their own concerns, that the principal did not suffer sooner or later. That it should be so is in fact but the merited reward of indolence and overweening credulity.

Take care then, I repeat, that if you would have your children taught to *think* and to act for themselves, or by the agency of those whose interests are in all respects identical with their own, that you have them instructed in the sciences kindred to agriculture and necessary to its success, and to the pursuit of it as a delightful exercise of the mind as well as of the body; and my life for it, if these studies in early life do not of themselves qualify them for the various public trusts in the performance of which their property and liberties are involved, the very pursuit of them will generate a fondness for books and for intellectual discovery and enjoyment, that will speedily distinguish and raise them in the public esteem to an intellectual level with the most favoured classes, and cause them to be sought for and delegated, like the good farmers of Miletus, referred to by Herodotus, to the highest public trusts in times of great emergency. Besides, my friends, I need not tell you, that the very love of books on natural history and the physical sciences, connected with agriculture, which is sure to follow the early use of them, is in itself one of the most invaluable and honourable of all possessions—the cheapest and the most accessible—one which may be enjoyed in sickness and in health—in a prison as in a palace. Thus was it truly said by a celebrated statesman and scholar, every advance into knowledge opens a new scene of delight, and the joy that we feel in the actual possession of one, will be heightened by that which we expect to find in another, so that, before we can exhaust this fund of successive pleasures, death will come to end our pleasures and our pains at once.

Let those who doubt the comparative neglect of the landed interest, which may be said to result in a great measure from yielding up the government to those whose welfare is less intimately blended with agriculture, contemplate for a moment the spirit and tendency of our laws, *as a code*, since the formation of the Government, and observe how studiously, and by millions on

millions, they create and provide for other institutions, and how few have been enacted with express reference to the claims of the plough, either by means of establishments to diffuse agricultural science, or by the construction of public works and facilities to enhance the quantity and value of its products. True, after appropriating many hundred millions for the support of particular establishments, Congress, whose constituents are agriculturists in the proportion of more than three to one, has at last set aside for the collection of agricultural statistics, the prodigious amount of $1000! Even the munificent bequest of a noble minded foreigner is locked up or wasted, instead of being put in trust with those who would fulfil his dying wish, to benefit *our* country by the "diffusion of useful knowledge among men." Can such laws and proceedings be regarded as the embodiment of the will of an enlightened agricultural community, composing at least three-fourths of our population, and animated, as such a community if well instructed would be, by a clear understanding of its own rights and interests—of the principles of public justice and the true guarantees of national prosperity? Even since the war in 1815, in the mere apprehension of, or it may be wisely to prevent the recurrence of war, that pastime of despots and scourge of the human race, there have been levied chiefly on landholders and expended out of the public finances, more than $300,000,000 on account of our two military departments. Now who shall estimate the great results of any sum approaching that amount, to further improvements in all sorts of knowledge and machinery, and works connected with American husbandry, such as roads, bridges, canals, harbours, and other facilities for external and internal trade and manufactures, the great helps and handmaids of the plough: works which, while they bring interior and remote regions within reach of sustaining markets, constitute in themselves the best of all military defences, and, what is better, the surest cement of the Union; in proof of which, note the recent declaration of a British Quarter Master General, that an *army* could be taken from London to Manchester in nine hours by railway, while to march there would require seventeen days! Bring your sons up then to frame their legislation on the wiser and more benevolent theory, that the true glory and safety of a country of boundless resources, and far removed from contact with dangerous rivals, consists in *knowledge* diffused among the *masses*, and especially among those who live by rural labour—in clear, well instructed *minds*, as well as strong arms, to discern and cultivate our unequalled natural advantages. For after all—

> What constitutes a State?
> Not high rais'd battlement or labour'd mound,
> Thick wall or moted gate;
> Not cities proud with spires and turrets crown'd,
> Not bays and broad-armed ports,
> Where laughing at the storm, rich navies ride;
> Not starr'd and spangled courts,
> Where low-brow'd baseness wafts perfumes to pride:
> No! MEN, high minded MEN;
> Men who their duties know,
> But know their rights, and knowing dare maintain:
> *These constitute a State.*

PICKLED EGGS.—Among the numerous pickles in common use, it very rarely occurs that pickled eggs are to be witnessed, either in oil-shops or upon the table. Nevertheless in the counties of Hants and Dorset pickled eggs constitute a very prominent feature in the farm-house store-rooms, insomuch that the latter would be considered, by the industrious house-wife, unfurnished without them. The mode in which the good dames pickle the eggs is simply thus:—At the season of the year when their stock of eggs is plentiful, they cause some four or six dozen to be boiled in a capacious saucepan until they become quite hard. They then, after removing the shells, lay them carefully in large mouthed jars, and pour over them scalding vinegar, well seasoned with whole pepper, allspice, a few races of ginger, and a few cloves of garlic. They then, when cold, bung them down close. In a month they will be fit for use. Where eggs are plentiful the above pickle is by no means expensive, and, as an acetic accompaniment to cold meat, it cannot be outrivalled for piquancy and *gout* by the generality of pickles made in this country.

EXTRAORDINARY CALF.—Mr. W. W. Ballard, of Southport, Chemung county, N. Y., has a Durham bull calf, named "Victor," aged four months and 29 days, which, for weight, beauty of limbs, and symmetry of form, is an object of great curiosity. His length from his horns to the but of tail, is

	6	feet.		
Girt behind fore legs,	5	"	2	inches.
Around brisket,	6	"	1	"
Breadth across shoulders,	1	"	6	"
" " hips,	1	"	7	"

His weight is 588 pounds, being only 12 less than 600 pounds. His weight six hours after he was calved, was 98 pounds. His weight now shows a gain, on an average, of three and a quarter pounds per day since his birth. His food has been milk and grass. Beat this who can.

The dam of "Victor" is the finest cow, probably, in this vicinity.—*Elmira Rep.*

Raising Potatoes.

The editor of the Farmer's Monthly Visitor has this season raised between twelve and thirteen hundred bushels of potatoes on about six acres of sward land. The ground was prepared in the following manner:—After the corn planting had been finished, about the 25th of May, manure, on about one acre compost, and upon the other five acres clear manure from a stable, made during the preceding summer and winter, was laid out in piles and spread over the grass which had then already started green from the ground. In furrows of about 12 inches in width, the whole flat was completely turned over, these shutting into each other so close as to leave no vacuum between. With the sod thus inverted and the manure all covered to the depth of about six inches, the potatoes were planted between every third furrow, at the distance in the rows of about three feet from each other. A hole or crevice was made from two to three inches below the surface, with a sharpened stick, and at the distance of eighteen inches a single potatoe of the common size placed in it and covered up with a kick of the heel, generally, where the soil would admit of it. Care was taken that the seed potatoe should not enter so deep as to go below the upturned sward. In this way the potatoes grew above the sod, while the roots drew sufficient sustenance from the decomposed manure and decaying turf at the bottom. During the whole season there was no difficulty from weeds: the witch-grass in some parts of the field where it had taken root, did, indeed, late in the summer, spring through the inverted turf. The whole process of hoeing the six acres twice, cost only twenty-two days' work of one man; the planting was done with great expedition. In twice hoeing and going over with the cultivator and the subsequent digging of the potatoes, neither the bottom turf nor the manure overlaid by it has as yet been disturbed. The crop of Indian corn intended for the same land next year, according to our present year's experience of a field last year cultivated in the same way, will derive a greater advantage from the manure than the potatoe crop of the present year.

One advantage of raising potatoes in this manner, we believe to have been the entire freedom of the crop from the disease and rot which have been so generally complained of. The ground was the ordinary intervale of Merrimack river, which had laid so long to grass, as to give not much over half a ton of hay to the acre—it was good land, but was much in want of stimulating manure. The crop of potatoes was probably not quite as large as it might have been, if the same manure had been mixed in the same depth of soil actually pulverized; neither was the labour of making the crop more than half as much; but the manure is left in the ground to do much the most effective service hereafter. On a diligent inquiry of our potatoe diggers, we have not been able to learn that any of the new potatoes were infected with the rot. The earliest kind were taken from the field before the warm weather of September, and those laid in the common cellar, have as yet discovered none of those offensive qualities which have been so much a matter of complaint. One hundred and fifty barrels of the first dug were sent and sold in the Boston market, averaging, after paying the price of transport, twenty-five cents the bushel. Of the long-reds, we have between five and six hundred bushels in the ground under a hemlock cover, which in the market next spring, may be worth fifty cents the bushel: at half that price, after paying all expenses of cultivation and manure, this crop will give us a clear gain of about twenty dollars to the acre.

On about one acre of the potatoe ground manured with the stable dung, after the first hoeing, was placed some eight hundred pounds of ground plaster. Where this was applied the tops of the potatoe were more luxuriant—the potatoes seemed to be fewer in number, but all of a larger size. The effect of the plaster was to make the crop at least one-fourth better.—*Farmers' Monthly Visitor.*

Hints to Lovers of Flowers.—A most beautiful and easily attained show of evergreens in winter may be had by a very simple plan, which has been found to answer remarkably well on a small scale. If geranium branches taken from healthy and luxurious trees just before the winter sets in, cut as for slips, and immersed in soap and water, they will, after drooping for a few days, shed their leaves, put forth fresh ones, and continue in the finest vigor all the winter. By placing a number of bottles filled in flower baskets, with moss to conceal the bottles, a show of evergreens is easily insured for a whole season. They require no fresh water.—*Dollar Farmer.*

The true way of enriching ourselves is by cutting off our wants.

It is better to fill our barns than our chests.

Labour.

The following extract is made from an address lately delivered by Horace Greely, before the literary societies of Hamilton College, on "The Discipline and Duties of the Scholar." How numerous are the instances of enthusiastic students consuming the best boon of life in their favourite pursuits, and when the goal of their ambition is gained, the melancholy truth, for almost the first time is learned, that *consumption* or *dyspepsia* must be the perpetual and irremediable drawback upon its enjoyment: with the tardy reflection too, that exercise and bodily labour would not only have averted these evils, but have given a continual freshness to life and its objects, which the listlessness, attendant on sedentary pursuits prevented them from being acquainted with.—Ed.

Labour! blessed boon of heaven, to alleviate the horrors and purify the tendencies of our fallen state! When shall its benefits and its joys be brought home to each and to all! We make it a curse and a burthen by so regarding it, as we may any other blessing; but the truth is irrepressible, that only he who is familiar with labour, and loves it, can either improve or enjoy life. The man whose only stimulant to exertion in any field is the hope of individual gain, can hardly have risen above the condition of a slave. We must learn to be true workers—our frames need it—our unperverted impulses demand it—our very souls, if unstifled, cry out for it. Most earnestly, then, do I record my protest against the all but universal proscription which divorces entirely, profound study from manual labour—which, in its attention to the intellectual and moral nature of the student, forgets that he has also a physical frame to be developed and invigorated. Of course, you will not understand me as assuming, that the usual routine of student life forgets or disregards the necessity of physical exercise—I know better. I will not doubt that wherever thoughtful, conscientious and cultivated men have charge of the education of youth, there are, there must be, abundant inculcations of the necessity of exercise, and the value of health; also of the danger of losing the latter through neglect of the former. I will not doubt that abundant opportunities and facilities for exercise are everywhere afforded. Yet what is the result? Do the mass of our young men finish their studies with stronger constitutions, sturdier frames, more athletic limbs, than they brought away from their parental firesides? Not within the sphere of my observation—far otherwise. I have known many dyspepsias, consumptions, debilities, which traced their orign to the seminaries: I do not remember any that were cured there; I have known the stout lad in the district school, who graduated a feeble invalid from the university. My conviction is, that the physical department of education has decidedly retrograded since the days of Greek freedom and glory. Our prevalent error is not one of method and detail—it is fundamental. We have lost the true basis ordained for the harmonious and healthful developement of the whole human being, in separating the education of the head from the education of the hands. We have dared to disregard that divine fiat, first of punishments, and therefore first also of mercies—'In the sweat of thy face shalt thou eat bread!' Shunning this appointed path, we have sought out inventions, which we term exercise, recreation, relaxation. Heaven placidly, but inexorably disallows them. I do not say that for the cramped, soul-dwarfed, undeveloped miner, delving for six days of each week in some stinted Egyptian labyrinth in the bowels of the earth, there may not be appropriate recreation in the free air and sunshine. Malign circumstance has grudged him a full developement—his class are significantly advertised for as 'Hands wanted'—not men. But to the true and whole man each successive duty is the proper relief from the preceding, and in the regular alteration of labours—now those which tax mainly the intellect, next those which appeal mainly to the sinews—is the needed relaxation best attained. Thus only shall life be rendered consistent and harmonious; thus shall each hour be dignified and rendered heroic.

Take care of your Woodlands.

There are very few things which farmers in general exhibit such gross waste and want of forethought, as in their treatment of their woodlands. Dependent as the great majority must always be on these for fuel; diminishing rapidly as they must be in our climate annually; a large proportion timbered with trees that do not readily shoot up, and will not grow again without some protection; we still see the noble trees of our original forest as carelessly and as uselessly felled as though they were not the growth of centuries, and like Jonah's gourd, would spring up again in a night. In the management of our woodlands some things are deserving of notice, that are too generally entirely overlooked.

The first thing, and it is an indispensable one, is, that the woodlands should be well fenced. We can never have a growth of young timber, particularly on lands originally covered with beech and maple, and their kindred trees, unless this is done. It is true,

thousands of young trees will germinate, but so fond are cattle and sheep of their young foliage, that none to which these animals can have access, will be permitted to grow. It is only after a thick growth of underwood, sufficiently tall to be beyond the reach of cattle, has been secured, that any animal should be admitted to the wood lots. We have seen a beautiful wood lot on which thousands of thrifty young trees from three to five feet in height were growing, reduced in a year or two to the condition of an open wood, and the young growth entirely destroyed, by being carelessly thrown into a cattle range; and there is scarcely any wood lot, however destitute of young trees it may now be, that will not be covered with them in a short time, if kept safe from the intrusions of animals.

The second thing to be remembered is, never to cut a tree needlessly. There are many who, when they want a piece of timber, no matter how small it may be, instead first seeing whether the want cannot be supplied from some already fallen, or timber already on hand, take their axe and improvidently prostrate any tree they can make subserve their present purpose, without reference to future value or use. Never fell a tree until you have ascertained its value for general purposes, for fuel, and not till you have found it absolutely necessary.

Another thing not to be forgotten in the treatment of woodlands is, always to select those trees which have arrived at maturity, are the slowest in their growth, or have begun to decay. In a thrifty woodland, the greatest amount of growth is usually with the younger timber; for though there will be some large trees that will increase as fast as smaller ones, and consequently give a much greater annual increase of wood from their greater diameter, yet there will also be many with no perceptible growth, or on which the process of decay has actually commenced. Such are the trees that should be selected for timber or fuel; and a double advantage will result from this course, thrifty timber will be saved, and the younger growth benefited by more ample exposure to the sun and air.

It will be found of essential service in the preservation of woodlands, and in increasing their value, to keep all vacancies that may occur, either naturally, or by the falling of trees, filled by transplanting. We know of some farmers who keep a nursery of locusts for the express purpose of increasing the value of their wood lots by transplanting this excellent timber tree wherever an opening offers. Others use those kinds of young trees which are readiest at command, or to which the soil seems most congenial. The kind of tree transplanted is of comparatively little consequence, provided it is of sure and quick growth, and is fit when grown, for either timber or for fuel. By attention to the points we have here indicated, the value of our wood lots might not only be greatly increased, but the scarcity of wood with which so many of our farmers are already severely threatened, be averted. — *Cultivator.*

AUTUMN.

By Lydia H. Sigourney.

"Has it come, the time to fade?"
And with a murmuring sigh
The Maple, in his motley robe,
Was the first to make reply;
And the queenly Dahlias drooped
Upon their thrones of state,
For the frost king with his baleful kiss,
Had well forestalled their fate.

Hydrangia, on her telegraph,
A hurried signal traced
Of treason dark, that fain would lay
Bright summer's region waste;
Then quick the proud exotic peers
In consternation fled,
And refuge in their greenhouse sought,
Before the day of dread.

The Vine that o're my casement climbed,
And clustered day by day,
I count its leaflets every morn;
See how they fade away;
And as they, withering, one by one,
Forsake their parent tree,
I call each sear and yellow leaf
A buried friend to me.

"Put on thy mourning," said my soul,
"And with a tearful eye,
Walk softly mid the many graves
Where thy companions lie;
The Violet, like a loving babe,
When the vernal suns were new,
That met thee with a soft, blue eye,
And lip all bathed in dew;

The Lily, as a timid bride,
While summer suns were fair,
That put her snowy hand in thine
To bless thee for thy care;
The trim and proud Anemone;—
The Daisy from the Vale;—
The purple Lilac tow'ring high,
To guard its sister pale:

The ripened Rose—where are they now?"
But from the rifled bower
There came a voice—"Take heed to note
Thine own receding hour;
And let the strange and silver hair,
That o'er thy temple strays,
Be as a monitor to tell
The Autumn of thy days."

The Disease in Potatoes.

To the Editor of the N. E. Farmer,—

Not having seen any communication objecting to the views I have taken of the cause of the disease in the potatoe, and which subsequent examinations have only tended to confirm in my own mind, I resumed the investigation of the subject. The results I now offer to you for publication. I have first to notice the idea that this disease arises from worms which are found in the decayed potatoe—and remark,

1st, That the worms are the same which are found in all rotten potatoes, from whatever cause the decay may arise.

2nd, The potatoe decays previous to the worms appearing, for the worms are never found in the sound part of the potatoe, eating their way in or depositing their eggs, nor have I ever seen the worms in that part of the potatoe in which the fungus has already commenced vegetating: it is only in the most rotten part that the worms exist, after the fungus has caused this decay.

3rd, Salt instantly kills the worms, as any one may satisfy himself, with the assistance of the common compound microscope.

Under the full impression of the existence of the fungus in the potatoe, two questions present themselves.

1st, Is the fungus the cause of the decay, or merely a growth on the tuber already diseased from some other cause?—and

2nd, When and in what part of the plant the disease originates, and how is it propagated and disseminated?

The probability is that the fungus is the cause of the disease—for the fungus appears on the skin of the potatoe, and can be traced by its gradually dark colour penetrating from the outside by degrees into the sound inside, the outside fungus developing itself first, and producing slime and rottenness, while the inside yet remains firm and sound. If the fungus resulted from the potatoe first becoming rotten, and thus forming favourable circumstances for its vegetation, then the presumption is that we should occasionally, although perhaps rarely, find parts of the potatoe rotten *without* the fungus, which I, at least, have never yet seen. I have often seen heaps of rotten potatoes, without ever before observing this peculiar fungus, which, on account of its smell, cannot be mistaken. If this was therefore a disease merely affecting the rotten potatoe and not the sound one, it would have been long ago and much more often observed. Dr. Wallroth, an excellent German botanist, who appears to have closely studied the fungus family, observes in the *Linnea*, (a botanical periodical, published in Germany,) vol. 16, for 1842, that he has ascertained the disease called there the *potatoe scab*, or *wart*—a kind of swelling or tumor, ending in rottenness—to be a species of subterranean fungus, which he calls *Erysibe subterranea*, and of which he gives a long scientific description. I am not sufficiently versed in this subject, to decide whether this description agrees exactly with the disease at present under discussion, but it appears to me to differ in several particulars.

The second question, as to the origin and propagation of this fungus. is one which presents great difficulties in its solution. These arise partly from the knowledge of the propagation of the fungus family being yet in its infancy, and partly from the want of means of pursuing the study of this microscopic subject properly. From the almost universal accounts of the tops of the plants having first died down, and thus indicated the disease, it has suggested itself to me, even if this fungus is really a subterranean species, whether it has not been propagated and disseminated by spores floating in the atmosphere and attaching themselves to the *stalk* of the potatoe, on that vegetating and extending themselves downwards until they reached the point of junction with the tuber, there producing decay, and the death of the upper part of the vegetable, and afterwards disseminating themselves through the tuber.

A parallel to this probably exists in the *mushroom*, a fungus which is naturally produced from horse droppings, when by being kept dry for a considerable time, they have arrived at a favourable state for the developement of the spores. These spores have probably attached themselves to the stems of the hay which has been eaten by the horse, have passed through its stomach and remained in an inert state, until favourable circumstances have produced their developement in the droppings.

I regret that I had not commenced this investigation early enough to have examined the stalk and its junction with the tuber, with the microscope, on the first appearance of its drooping, as all the proof now to be expected from experiments, can only be of a negative character: however, here are such results as I have obtained:

1st. One of these much diseased potatoes was cut in halves; each half was placed on half a sound potatoe, in perfect contact, placed under a bell glass in a damp, dark atmosphere, temperature 57° to 62°. In five days the sound potatoe was not in the slightest degree contaminated with the fungus or the worms.

2nd. A whole diseased potatoe, covered

with black spots, was placed under a glass, in the same circumstances as experiment No. 1, in contact with a whole sound potatoe. The fifth day the sound potatoe remained uncontaminated and without worms.

3rd. A whole and much diseased potatoe was buried two inches below the soil, which was damp but not wet. A sound potatoe was buried in the same soil, two and a half inches distant from it, the temperature kept as before—57° to 62°. In five days this latter remained quite sound.

It is possible that five days is not long enough; I have therefore left them all in the same state, and shall not touch them for three or four weeks.

As I do not seek to establish any favourite theory, I trust my remarks may incite to observation and provoke discussion, and provided the practical and useful truth on this subject be discovered, I do not care much whether it be by myself or by others.

J. E. Teschemacher.

Report on Crops of New Castle County Agricultural Society, Del.

The committee on crops, beg leave to state, that although but few farmers have intimated an intention to put in their claims for the premium on either wheat, oats, potatoes or hay—the only crops that have been gathered this season, that can come under the notice of this committee at this time—enough is known to satisfy them that the wheat has yielded an average crop, particularly where the Mediterranean variety has been sown. It is known to many of the members of this committee, that a crop of ten to fifteen, and even twenty bushels, has been gathered from land, that seven years ago, would not, under the same circumstances, have averaged half that quantity. The cause of this happy result, may be mainly attributed to the use of lime, clover and plaster—and for their use we are much indebted to the enterprise and industry of a few individuals. It is within the recollection of some of the members of this committee, that there were but two well cultivated farms in the county, south of the court-house at New Castle; one of those farms, called Whitehall, at that time owned by Capt. William Frazier, and now owned by Augustine Mailly; the other was in the same neighbourhood, both in St. George's Hundred, and was owned by Christopher Vandegrift, and now owned by Eli Biddle. It was upon these two farms that clover was first used; and although great improvement was made there by the use of the clover, but few farmers availed themselves of the benefit of the example set them, but continued to adhere to the old system of cultivating in three fields, until about 20 years ago a few other enterprising farmers, the most prominent among whom were Philip Reybold and William J. Hurlock, of Red Lion Hundred, and David Wilson and others, of St. George's Hundred, and some in New Castle and other Hundreds, adopted the plan of seeding wheat on clover lay, &c.

Notwithstanding the good example set by these few enterprising farmers, it was but slowly and reluctantly followed by others, until a new era was brought about by the introduction of *lime* as a manure. And thanks be to our worthy fellow-citizen, Dr. James N. Sutton, of St. George's, who with a commendable zeal for the improvement of his native State, was induced to erect extensive lime-kilns at St. George's, on the canal, in the year 1831—at which period there had been no lime used as a manure in that part, or any where south of it in Delaware. The farmers appeared to be perfectly ignorant of its fertilizing properties; and so incredulous were they, that it was with much persuasion, argument and explanation, by writing and other means, for two or three years before he could induce them even to try it with a few bushels. All at once, however, the spell was broken—the few that were induced to try a few bushels began to see that their crops were doubled, and like magic the mist was removed—and from that time a new epoch dawned upon the agricultural interests of our own worn out and much neglected lands of New Castle county.* It was found by repeated experiments that the additional yield from a single course of crops—say corn, oats, wheat and clover—would amply reimburse *by extra produce*, not only the cost of a dressing of 40 bushels of lime to the acre, but in many cases, leave a balance equal to what had been the selling price of the same land—ten dollars per acre.

After the value of lime became fairly established, so great was the demand for it at 20 and 22 cents per bushel, that the writer of this article recollects in the month of May, 1835, he had an occasion for some for building purposes, and sent early in the morning to Dr. Sutton's kilns, and he found twenty teams at the kilns at sun-rise in the morning, awaiting their turn to load. Since then, lime has become of such general use, that the farmers of New Castle county would as soon think of starting upon a day's journey without their breakfast, as to think of planting corn on land that had not received a dressing of lime.

* This refers to the Hundreds before alluded to. Lime as a manure, was freely used in the upper part of New Castle county long previous.

The result is that our lands have increased in productiveness and intrinsic value, at a rate unprecedented in the improvement of lands in this or any other country. Actual sales go to confirm this; and notwithstanding the low price of grain, several farms in Red Lion and St. George's hundreds, within the last year or two, have brought 60 or 70 dollars per acre, where the same lands, 20 years ago, would not have brought more than 15 or 20 dollars at most.

We must not only give to lime the credit of renovating our exhausted lands wherever it has been used, but to it may be attributed the impulse given to our farmers to seek other aids in the great work. Seeing the good effects of lime, they were led to give a trial to *marl*, which so abundantly exists in the St. George's and Appoquinimink creeks and ravines merging from them—and which although known to exist there 20 years ago, was never considered worthy of use until within the last eight or ten years. The marl on the St. George's creek and inlets, consist entirely of the shell variety, and is now extensively used in the vicinity of the beds—in some cases they are hauling it three miles, and the farms around St. George's are now equal, and perhaps superior to any other body of land of the same extent in the State. On the Appoquinimink and its tributaries the green sand marl exists, and is extensively used by many of the farmers there. George W. Karsner, the pioneer, in the use of this variety of marl, has raised this year, 30 bushels of red chaff bearded wheat to the acre; he has improved his land entirely by the use of it. The marl is generally of easy access, and is in many places found within a foot or two of the surface. With these inexhaustible beds of *marl*—the facilities by water of procuring lime on the various landings, at the low price of 12½ cents per bushel for quick lime; and the same facilities for conveying his produce to market—a market, thanks to the eastern manufacturers, within a few miles, to the most remote farmers—for their corn and oats, at about Philadelphia prices, are some of the many advantages possessed by Delaware farmers.

It is a mystery to us that the citizens of Delaware, not of New Castle county alone, but of Kent and Sussex, should have so long remained blind to their own interest; but we trust that the film is now removed from the eyes of the landholders of New Castle county; and we have no doubt that Kent and Sussex will follow the good example. Already do the people of Kent show a determination to arouse from their lethargy. The introduction of lime, by kilns erected near Smyrna, by George W. Cummins, and by kilns erected at Forest Landing, on Jones' creek, has been instrumental in bringing about a new state of things there.

Much, however, is yet to be done there. The large landholders of Kent, have not yet taken the matter fairly in hand. A continued disposition upon the part of their tenantry and others to migrate to the West, is an evidence that the right spirit does not prevail with the landholders. Inducements must be held out by them to this class of their population to remain—and no stronger inducements can be offered than by improving their lands and offering worthy tenants better chances than they have heretofore had; and convince them by various means that it is their interest to remain in their native State, and by a new system of proceeding reclaim the lands left to them by their imprudent ancestors.

The soil of Delaware has proved itself, originally, equal to any other, or it would not have stood the use and abuse of ages—and to its susceptibility to improvement there is now evidence enough, not only in New Castle county, but in Kent and Sussex, that it can be reclaimed and made as productive as any other lands. Why then the necessity for seeking land in the West, when it can be purchased in many parts of Delaware, for six, eight, and ten dollars per acre, in locations where the best lime can be purchased for 12½ to 16 cents per bushel—and a market for produce of all kinds can be had at a trifle less than the Philadelphia price.

There are other advantages in Delaware over most other sections. Our convenience to the seaboard gives us an advantage of the Eastern markets; those great manufacturing depots of the U. S., our natural and only sure market now, and perhaps will so remain, probably, for all time to come, the year round, and foreign markets, where there is any demand; and especially is this advantage realized in the winter season, over Philadelphia, and other places up the Delaware river, or from N. Jersey. Vessels can load at and depart from New Castle, Delaware City, and Port Penn, and our Southern ports, during the winter season, when it is hazardous, and even impossible to get to Philadelphia. And as an evidence, there was shipped last winter, from the three little ports of New Castle, Delaware City, and Port Penn, from the 20th of December to the 10th of February, in the dead of winter, 150,000 bushels of grain, principally corn of the new crop.

There are advantages also of our location, in the time required to get our produce into the Eastern market, as well as getting it there at a season when there is no competi-

tion from the West, and in much better condition than that from the South, as it is seldom requisite for grain to remain in the vessel more than ten or twelve days, and frequently it is discharged in the Eastern ports, in a week from the time it is taken in here.

As an evidence of the importance of the Eastern market, we will state that on the 23rd of September, 1842, 72,000 bushels of corn arrived at Boston in one day.

When we consider the advantages of location, in connection with the salubrity of climate, now admitted to be equal to any other, and much less subject to the acute and fatal diseases prevailing further North, we have great cause to be thankful that our lot has been cast in a land offering so many advantages.

The committee on crops award to J. Jones, the premium offered by the Society for the best crop of timothy hay, he having cut, as he alleges, over two and a half tons to the acre, from a lot of three acres.

Signed, B. Jackson,
J. Carr,
J. N. Cleland,
J. Smith.

They also award to Dr. Noble, the premium offered for the best five acres of wheat, he having taken 75 bushels of wheat, Mediterranean variety, from two acres, [see the Doctor's letter, page 105, last No. of Farmers' Cabinet.] This land was purchased about five years ago, for $15 per acre. It has since received a dressing of 40 bushels of lime, and also a dressing of about eight loads of his *peculiar Philadelphia compost* to the acre, and was sown with Pennock's Drill upon a clover lay.

J. Jones, *Chairman.*

For the Farmers' Cabinet.

Rotation of Crops.

In offering a few remarks on this interesting subject, I have no apology to offer, other than its comparative neglect by the many valuable correspondents to the "Farmers' Cabinet." If this should be the means of preventing one individual from experimenting as I have done, with loss too, my end will be answered.

I have observed that where oats, winter grain and grass have been grown among young trees, the grain and grass have invariably flourished under the branches of and around the young trees, apparently drawing the food and nourishment from them, and thus preventing in the trees any more than a very stinted growth. And, when corn, potatoes, vines, and buckwheat, have been grown among young trees, the trees have flourished, and have invariably checked the growth of the above named crops, when so near as to get in contact with their roots. That on a repetition of any kind of grain crop on the same land for years, without a change or extra manuring, the crops have diminished in quantity and quality too. And by a judicious change of crops, they have been made to increase in quantity and quality too. The course of crops adopted in this country by a majority of the farmers, is to plant corn after grass,—the following spring to sow oats on the stalk ground (some plant two years—in such cases they sow the second spring,) the fall following they sow wheat and grass seed on the wheat. There have been many changes and departures from this rule observable among us, but after a few experiments by the farmers, they have generally returned to the course as mentioned above, which seems to be the best, as neither crop *injures* the productiveness of the soil for the succeeding, but rather increases it.

I have also known corn and rye to be grown alternately, for years on the same land without any apparent diminution of either crop. And when any two kinds of vegetables have grown together or near each other, the kind that overpowers and stints the growth of the other, is the poorest crop to succeed and flourish after the other has been removed; and on the other hand, the crop that has been stinted in its growth by the other, is the best to succeed it. This as a general rule, no doubt will hold good.

In the spring of 1842, I planted peach seeds on a wheat stubble, the trees from which without any manuring, by the time of transplanting, or within two years, had reached the height of five to ten feet, with heavy branches; and on removing the trees in 1844, I planted corn on the same land, which grew and flourished beyond any I had ever seen on land of the same quality and state of cultivation, except about an acre adjoining which had potatoes grown on it the previous year.

I cleared another piece of land of peach trees about the same time—some of which were more than ten feet high above ground—on which I sowed oats, and at harvest time, although the land was of the first quality for oats, and had produced such large trees, yet I found it very difficult to gather them, they were so short—except on a small strip along the fence, that I had used to turn on.

One of my neighbours a few years ago,

finding it very difficult to get his corn to stand on a grass sward, on account of worms or insects, tried the experiment of sowing oats on a sward to clear the land of insects, and the following year he planted corn on the oats stubble, and he remarked to me afterwards, that his corn did *stand*—it stood too well—it was stationary—for it did not grow at all. And I have often heard it spoken of by other persons, as the poorest corn they had ever seen—and produced on harvesting, if my memory serves me, only five two-horse loads, of forty bushels of nubbins, nearly all soft, off of eighteen acres. The oats being very light too.

In the spring of 1835, I set out a young orchard of apple and peach trees, and thinking it would be advantageous to the trees not to disturb them the first year, while they were putting forth new roots, I sowed oats among them—the consequence was the loss of several trees, and a loss to the remainder of nearly a year's growth.

I have had five fair crops of the peaches and two small ones, or partial failures, from my trees. And each succeeding year they rot more than the former; on which account for the last two years, and particularly the last one, many of the trees have become altogether worthless, which leads me to the conclusion, that the soil needs some addition to or subtraction from it, to enable the trees to perfect their fruit. The peaches have grown fair and to a good size, until about the time they swell, or in other words, until saccharine fermentation should commence, and expand them. It cannot be on account of acids in the soil, because I covered the land two years ago with lime in the state of a carbonate—which is known to be a corrector of acids—to the amount of three hundred bushels per acre. The question arises with me, whether there could be a crop grown among them that would enable the trees again to perfect their fruit, and whether white clover is that crop, as it is almost impossible to eradicate it from the land. I have almost ventured the belief, that creative power has been at work, or that the earth has turned to seeds, as it is utterly impossible for seeds to vegetate and grow nearer together than the white clover has done among my trees year after year. The ground has been well stirred several times every year, since my trees were transplanted.

The above hints I have thrown together. If they may be thought of any worth to the cause of agriculture, they are at the disposal of the editor.

D. Petit.

Mannington, Salem co., N. J.

In Farming, Manure is the principal thing.

To the Editor of the Marlboro' Gazette:

There are so many good hints in the enclosed extract from the last number of the New England Farmer, and there are so many of my acquaintances who ought to be ready to take them, that I cannot forbear asking you to give them a place in the Gazette.

The chief, the grand, I was going to say, almost the sole object, with every farmer, should be the accumulation of manure, from one year's end to another, day in and day out, and from every possible resource. Not a single pound of feathers, or of hair—of horn, or of hoof—not a single pint of ashes, or of soap suds, or of urine—not a weed if it were possible to prevent it, should be lost; all—all should be saved and converted into manure. Of one thing every farmer is certain—that cultivation exhausts his land—something, of course, must be done to restore that of which it is exhausted. How long will a horse work if he gets no feed? How long will the best cow give milk if she gets nothing to eat? Neither can a farm be worked and milked without being fed.

Instead of looking only to the stable, or the cow-pen, or barn-yard for manure, and managing them carelessly and unskilfully, the thinking farmer will reflect, that there is nothing which will rot, but that it may be converted into good fattening food for his farm. If a horse dies on the farm, let him be covered with cart loads of earth, and the very gasses that escape in the course of putrefaction, will impregnate and make good manure of the whole mass. Let nothing be lost—not even the offal of poultry or the pigeon-house. I. S. S.

Gleanings on the farm.—The first lesson in true economy is, to take care of small matters. When one has made a fixed principle of action, he will be very sure not to suffer more important matters to be neglected. There are many things scattered over the farm that are worth saving, and may be turned to profitable use, if taken care of now, but which will lose their value if neglected much longer. Of this character, are substances for manure and litter—such as vines, potatoe-tops, leaves, bog herbage, &c. The collection of leaves for manure is particularly deserving attention. "For many years (says one who has practised this,) I have been in the habit of collecting in the fall, leaves in my wood lot, and to use them as litter for my cattle through the winter When the floor is cleared in the morning,

the leaves and dung are turned over and chopped together, before they are thrown out. This kind of manure for potatoes, I find superior to any other I ever used; it unites the richness of animal matter with the sweetness of a woodland soil; and I feel confident that it not only contributes to the abundance of the crop, but that it ensures a superior quality. From the repeated benefits I have derived from the practice, my estimation of leaves has gradually increased, and they have become such an essential article in the cultivation of my small farm, that I should now be at a loss how to do without them. They pack better if collected when somewhat damp, and when mixed and chopped with the dung, will more readily ferment."

Perhaps there is a good deal of small stuff scattered over the farm that will serve for fuel, which may as well as not, and a good deal better, be picked up now, before it is hidden by the snow—which latter, may come without warning, and when little anticipated. At any rate, it is wisdom to prepare for emergencies.

Let every thing be saved for winter fodder that is eatable by your animals. "We hear it foretold by our veteran farmers, (says the American Agriculturist,) that the coming winter will be a tolerably severe one. They say that they have never seen a season of great abundance, especially in fruit, that was not followed by a hard winter." Though little faith is to be had in such signs, it is best to prepare for the worst, and save every thing to lengthen out your stock of food, that can be saved. Some vegetable substances which cattle will not eat alone if they can get more palatable food, they will freely devour in winter, if mixed and chopped with a portion of eatable hay.

Turnip and cabbage leaves, and corn husks, should all be husbanded for fodder. They are superior as food for cattle, to hay of common quality.

We have seen pumpkins left in the fields to rot, the farmer having, seemingly, grown more than he knew how to dispose of with profit. At one of the meetings of the New York Farmers' Club last summer, a gentleman presented some sound pumpkins of the growth of the previous year, which had been preserved by placing them in one of his outbuildings on rails laid in courses, so that the pumpkins did not rest on each other. This plan seems worthy of trial: for stock—cows in milk especially—would be much benefited, by a meal a day of pumpkins, in the last of winter, or beginning of spring—more especially if their owners do not provide other condiments for them in the shape of carrots, turnips, or beets; and it is yet true—"and pity 'tis true"—that many a stock of unfortunate animals have to live through, or rather get through, the winter, without having a taste of a root—kept upon the low diet system—the *Graham* system in an aggravated form; that is, a few cornstalks, a very little good hay, and a great deal of—straw. Pity that the poor brutes thus cheated of their dues, had not the faculty to persuade their owners that both self-interest and humanity dictate that they should keep no more stock than they can keep well.

Your sheep will thank you for saving them your bean vines for a bite in the winter; and in this connection we introduce the following, thinking it may impart information from which some may profit:

If you have any beans on hand which are unfit for culinary purposes, in consequence of being mouldy or rancid, wash them carefully, and give them to your sheep. A gill a day will be of more benefit to them than a pint of corn. Beans, for sheep, even in this condition, we consider equal to the best corn in any state.

Upon the above, Dr. Lee, of Buffalo, remarks: Why is a gill of beans better for sheep than a pint of corn? This is an important problem, and one that not one flockmaster in a thousand can answer. If the object be to form fat sheep, then the remark that beans are worth more than corn, is not true—for corn contains more of the fat-forming elements than beans. But if the object be to form muscle and wool, then then the remark is true. Beans contain more of the elements of wool than any other cultivated plant. Hence nature, ever true to herself, has endowed the sheep with a taste for the plant which is denied to the pig.

Shoe Blacking.—The Southern Planter says, he had been watching the boots of persons passing his office for some time, to find out, whose did most credit to the brush. At length he pitched upon one man, who always looked well to his *understanding*, and on inquiry where he got his blacking, was informed that he made it himself, from the following receipt, to wit:

3 ounces ivory black,
2 " coarse brown sugar,
½ " oil of vitriol,
½ " muriatic acid,
1 table spoonful of sweet oil,
1 pint of good vinegar.

Mix the ivory black, oil, sugar and vinegar, and then add the oil of vitriol and muriatic acid mixed together.

Corn Crop.

Our Indian corn is the pride of our agriculture, as well as the great staple of the country. Nearly five hundred millions of bushels are reported as the crop of 1843: but what would this have swelled to, had the average, instead of twenty bushels per acre, been the half of what is given below as the produce of our friend Wadsworth's four acres! Let us not be alarmed at such an increase of grain as this would throw into our garners. We need not fear but that with increased facilities of living, an increased population will be prepared to sweep off all that the earth will yield. To multiply the means of living, is to multiply life itself, as well as to augment its comforts. We take the following statements from the *American Farmer*, which credits it to the *Connecticut Farmer*.—Ed.

If there is any spot in the Universe where more corn can be raised upon an acre of ground, than has been produced upon the farm of Mr. Wadsworth, of Durham, Middlesex county, *in old Connecticut*, we should like to know where the spot can be found.

The following extract from the Report of the Middlesex County Agricultural Society's Committee on Field Crops, is perfectly astonishing. Read it, you who are in the habit of skinning *seven acres* to obtain the product of one, under proper culture.

The Indian corn, entered by Mr. Wadsworth for premium, was one quarter of an acre, selected from near the middle of a field of four acres. The field was planted with the "Improved Dutton Corn," about the first of May, in hills, three feet apart, each way. The land on which it was planted was "sward ground," manured with common yard manure, at the rate of 20 to 30 cart-loads to the acre, turned over flat, and rolled, and the corn planted on the furrows. It was hoed four times without hilling, or turning up the furrows between the rows. The seed with which it was planted, appeared to be a mixture of the common Dutton corn, and a very large kind of eight rowed corn, and the whole crop was comprised of a mixture of the two varieties, in about equal proportions; a bushel of each kind of which was laid before your committee for inspection. The ears of both kinds were very large and long, many of them measuring nearly, or quite 14 inches in length. The kernels upon the eight rowed were very large, and the cob small. The kernels on the twelve rowed were also much larger than the common Dutton corn. And your Committee are of the opinion, that if Mr. Wadsworth will continue this cross mixture for a few years, he will have a kind of corn far superior to any now in use. On this field of corn, the *suckers* were allowed to remain until the customary time for cutting the stalks. The product of that portion of the field entered for premium, was at the rate of *one hundred and fifty-one bushels and eighteen quarts to the acre!* Your Committee are aware that it hardly seems possible that so large a quantity could be raised from an acre, in this old hide-bound State of Connecticut, yet, from the certificate of the town Committee of Durham, and from the statement of Mr. Wadsworth, under oath, such was proved to be the fact. Think of this, ye farmers of Middlesex county! *One hundred and fifty-one bushels and eighteen quarts of shelled corn from one acre!* This eclipses even the far famed corn regions of the great valley of the West. With facts like this before their eyes, our young farmers, we think, will hardly feel disposed to quit the healthful home of their sires, to seek a fortune among the Wolvereens and Hoosiers of the western prairies; but be content to settle down amid the hills and dales, where dwell the lovely lasses of our own dear Yankee land.

In competition with the foregoing, was a quarter of an acre of eight rowed corn, entered by Joel M. Clark, Esq., of the Society of Westfield, in Middletown. This corn was raised on green sward land, ploughed plain, and rolled. Two coats of hog-pen manure were applied. One coat being coarse, was put upon the land and ploughed in. The other was fine manure, placed upon the top, after the field had been ploughed and harrowed in. The whole amount of manure used was about sixty-five "cart buck loads" to the acre. It was planted about the 20th of May—four kernels in a hill—hills three and a half feet, by two and a half apart. The soil is a gravelly loam. The seed was rolled in plaster of Paris, before planting. And, if your committee are not mistaken, the *suckers* were all removed from the hills about the time of the last hoeing. The product of that portion of the crop which was entered for premium, was at the rate of *one hundred and eight bushels and four quarts to an acre;* which every one must admit to be a very extraordinary yield; and the Committee regret, exceedingly, that the rules of the Society will not admit of a premium being awarded. The *quality* of this corn was superior, in the opinion of your Committee, to any exhibited. The kernels were large, and the ears well filled, but too short to be productive, under ordinary circumstances.

In cleaning out horse stables, where there is no floor, every body notices the rising of a great steam—sprinkle plaster of Paris, and retain it.

Raising Wheat.

We make the following extracts from a Report of the Committee on Agriculture, made last spring to the New York Legislature. It is found in the Transactions of the N. Y. State Agricultural Society.—Ed.

Suppose a farmer now cultivates six acres of land in wheat, to harvest 100 bushels, how is he to manage so as to grow 133 bushels at the same expense? If he can raise 33⅓ bushels per acre on four acres, that will give him the amount desired and save the whole cost of cultivating two acres of land. This saving may be set down at $8 per acre, which will give $16 surplus to be expended in purchasing the raw material to produce the extra 66 bushels of wheat on the four acres to be cultivated by a new process. As about 94 per cent of ripe wheat plants consist of carbon and water, charcoal must be an important element in fertilizing the soil. Of the other 6 per cent about one-half is nitrogen, and the other moiety is made up of silica, potash, soda, magnesia, alumina, phosphorus, sulphur, chlorine, and a trace of iron. Let the wheat grower take 100 bushels of charcoal, grind it fine in a bark mill or pulverise it well with flails on a threshing floor, and add thereto five bushels of ground plaster. This would not cost in most farming districts in this State over $7, and if the coal and gypsum be placed in a vat or large tub and saturated with the urine of cattle, or partly moistened with the liquid excretions of the human species, and have five bushels of leached ashes mixed with the mass, it will contain all the elements of 133 bushels of good wheat. In case the urine cannot be had, the addition of four bushels of salt will give all the soda and chlorine that are needed, while the ashes will furnish all the potash, silica and magnesia required, The plaster will yield the sulphur and lime, and a bushel of bone dust will give the phosphorus. A little copperas will supply the necessary iron, and the charcoal will not only yield carbon, but it will also absorb ammonia, always found in rain water when it comes from the clouds.

All these constituents of wheat can be best applied to the soil before sowing the seed, but a top dressing of a compound of coal, plaster, ashes and salt, moistened with whatever urine can be collected, may be applied to winter or spring wheat in April or May, with signal benefit to the crop. Deep ploughing and thorough draining are important aids in wheat culture, for reasons which your committee will not stop to explain.

The liberal use of freshly burned lime is very beneficial by the way of correcting any acidity of soil; and also by absorbing carbonic acid from the air, to be given up to the roots of plants, and thereby promote their growth. A pint of human urine contains ammonia enough to supply a bushel of wheat with all the nitrogen it needs. And it is worthy of remark, that wheat well supplied with nitrogen in ammonia, will contain from ten to twenty per cent more gluten than it would if it lacked that element, while the wheat that abounds in gluten will make from seven to fifteen per cent more good bread than the same quantity of flour composed almost entirely of starch.

In Flanders farmers pay forty shillings, or nearly ten dollars a year for the urine of a single cow for that length of time, to be used in the culture of wheat and other crops. Common sense would seem to teach every agriculturalist that he should restore to his fields every particle of the liquid and solid excretions of all animals that feed upon his crops.

Sagacity of the Cat.—Passing by the back window of a neighbour's house a short time since, I saw a favourite Tom-cat seated on a table near the window, beside a narrow necked cream jug containing milk; no person was in the kitchen. He was smelling the milk, and endeavouring to reach it with his tongue, but could not; at last he inserted one of his fore-paws, and withdrew it, the fur saturated with milk; after he had licked it clean, he dipped again, and kept repeating the process as long as I remained observing him, which I did for several minutes, and then left him to his employment, for I thought his ingenuity well deserved his reward.—*The Zoologist.*

H. Colman in comparing the business of the farmer with that of others, says: "I am anxious to assist the dignity of a pursuit which I regard among the most honourable, as it is among the most innocent and useful in life; and I would, if possible, soften its aspect and multiply its attractions to a large class of persons who have been accustomed to look upon it with indifference or disdain, but who would be sure to find in it, if ardently and intelligently pursued, health for the body, and peace and satisfaction—nay more, the strongest and most delightful interest for the mind."

To Wash Woollen Goods.—All descriptions of woollen goods should be washed in very hot water with soap, and, as soon as the article is cleansed, immerse it in cold water, let it then be wrung and hung up to dry. They will then not shrink.

Continuance of Milk in Cows.

It certainly would be a very great advantage to those who wish to keep a cow or cows, solely for their milk, if any feasible method could be adopted by which cows could be made permanent milkers, or their owners, particularly those who live in cities, be saved the trouble and inconvenience of their breeding. There are two ways in which this seems practicable. The first method is to keep the cow in milk, from the bull, by constantly stabling her, after her first and second calf, and in this state, milked regularly, and well fed, she will continue to give milk for two or more years. She usually ends, however, by becoming too fat for profit as a milker, her milk gradually failing, and she then goes to the butcher. The large dairies of London, have their cows treated in this manner, and in practice it is found far preferable to the old one, of having them "come in," annually.

There is another method of obtaining constant milkers, which has been extensively practiced in France, and known to some extent in this country. This is by spaying the cow some four or six weeks after calving, and thus by preventing impregnation, securing the cow in milk for several years. In the London Veterinarian may be found a paper by M. Rogere of Bordeaux, in France, who had, for many years, been engaged in a series of experiments on this subject, that had been eminently successful. The cows operated upon were of various ages, some quite old. The operation of spaying was followed with a restricted diet, to prevent the tendency to inflammation. This had the effect of reducing the quantity of milk for few days, but the flow soon returned, and continued unaffected for a long time. No danger was incurred by the operation when skilfully performed, and when from age or failure of milk, it became desirable to make beef of the animal, she was found altogether superior for that purpose to the unspayed ones.

In one of the earlier volumes of Ruffin's Farmer's Register, may be found a paper on spaying cows or heifers, not only for milk, but for feeding. Mr. Tabb of Virginia, under whose superintendence the operations were conducted, confirms the representations made of the value of milch cows so operated upon, but thinks it not less essential or important, where cows or heifers are to be fed. The following extract is from Mr. Tabb's paper: "The operation is performed on heifers not intended for milk, when they are about a year old, and with the single precaution of keeping them entirely from food or water during twenty-four or thirty-six hours previous—is not attended with the least risk—is performed in the same way, and may be done by any person in the habit of spaying pigs. They go to their food immediately after, and require no attention. We select the most indifferent heifers to spay, which is one way to improve the stock. You increase the size amazingly. They gradually become as large as ordinary oxen--are easily kept—make the finest beef—and as they are not in perfection until six or seven years old, we work them after three or four, to make them gentle, and for that purpose, consider them superior to the ox."

The practice of working milch cows is common in Germany, as appears from the accounts of various travellers in that country; and teams of spayed heifers have carried off prizes at the ploughing matches of Agricultural Societies in England. The suggestion made above, by Mr. Tabb, as to the practice of spaying having a good effect in the improvements of stock, is an important one. If the breeders of stock could so far forego the hope of immediate profit, as to be willing to submit all inferior, or part blood bull calves to castration, and all inferior heifers to spaying, it is evident the chances of breeding inferior animals would diminish rapidly.

Mr. Winn, keeper of an extensive hotel at Natchez, communicated to Judge Peters, of Pa., the result of experiments made by him in spaying cows, for the purpose of securing permanent milkers. It appears from the paper as given in the Transactions of the Pennsylvania Agricultural Society, that he had two cows, which after being spayed, gave milk constantly for three years each. He preferred cows that had produced two or three calves, as the bags of such would be more capacious than if spayed after the first calf. It is hoped some of our breeders or farmers will try this experiment, since if successful there can be no doubt such cows would command greatly advanced prices in places where cows are kept for their milk alone.—*Cultivator.*

Hoven Cattle.

One of the most singular cases of hoove that we have on record, is contained in one of the French periodicals. A cow that had been turned into the pasture in perfect health, was found in the course of the morning, labouring under great excitation, making frequent and violent efforts to vomit, and then galloping over the field with her mouth half open, and the saliva running from it as if she were mad. The eyes were haggard and fixed, and starting from their

orbits, and the nostrils were unusually dilated. When she stood still her back was bowed, but presently she would stretch herself out and bound away over the field. Her paunch began speedily to swell, and she moaned dreadfully and could not be still for a moment.

The practitioner not having a trocar, punctured the rumen with a bistoury. A great quantity of gas rushed violently out; the enlargement of the abdomen subsided, and she appeared to be entirely at her ease; but presently the efforts to vomit recommenced, and the aperture into the paunch being accidentally closed, she began rapidly to swell again. The practitioner now suspected that the cause of all this mischief was concealed somewhere in the gullet, or the entrance into the first stomach. He carefully examined along the whole extent of gullet in the neck, but could not detect any obstruction. He then opened the mouth and raised the head, in order to introduce a flexible osier rod into the gullet, when the animal again making a sudden and more violent effort to vomit, he saw the tail of a snake in the posterior part of the mouth. He seized it immediately with his right hand, and steadying himself by laying firm hold of the horn with his left hand, he drew it out: it was dead, and measured three feet eleven inches in length. There was no appearance of bite or wound upon it, but it was covered with a greenish spume. The efforts to vomit immediately ceased, the hoove disappeared, and the cow began to ruminate, and steadily regained her appetite and spirits.— *Youatt on Cattle.*

Butter.

The Committee on Butter, of the Worcester County Cattle Show, Mass., make the following very judicious remarks in relation to this subject. It may be remarked in passing, that there were twenty seven pairs of working oxen entered for premium.—Ed.

The quantity of butter presented for exhibition this year was unusually small, there being only about half the number of lots exhibited that there have been in former years. The committee, while they are gratified to be able to state that all the butter exhibited was of a superior quality, greatly regret this diminution in quantity, for which they are not aware of any particular cause, but they trust that it was the result of accident, and that it will be only necessary to call the attention of the farmers to the fact, in order to have the exhibition of next not only equal, but surpass that of all former years.

The farmers of this county, the great agricultural county of the State, should feel a just pride in exhibiting the products of their dairies; no source of pride can be more proper than this; one cannot look upon the beautiful yellow butter as it is presented in its neatly shaped cakes, without the least drop of buttermilk oozing through, and with the preserving salt so ingrained as to be undistinguishable, without thinking of the various stages it has passed through, and calling to mind the numerous other valuable acquisitions which must necessarily be connected with it.

Good butter bespeaks first a good cow, and a good cow a good pasture, and both together imply an intelligent farmer; and not less requisite is a good churner, and for a good churner give us a good farmer's daughter, one who never looks more blooming and bright than after the healthful exercise at the churn. No occupation is more befitting, none more honourable. No accomplishment should be more acceptable to the young husbandman, seeking a partner, than that the woman of his choice is well qualified to take the charge of his dairy, and excels in the difficult art of making *good* butter.

Gypsum as Manure.

The following statement made by J. H. Sheppard, of London, are taken from the New England Farmer —Ed.

Gypsum, or the real sulphate of lime, is considered by all scientific chemists and agriculturists a most powerful agent as manure. I beg to quote an extraordinary instance of its effects, on its first introduction into Norfolk, in 1816. When I was attending Mr. Coke's sheep-shearing, at Holkham House, and conversing with him in the park, he complained to me that a portion of his estate, near Wells, about six miles distant, was a very light sandy land; and, although he treated it in every respect like the rest of his farm, with plenty of manure, he was unable to produce more than six or eight bushels of grain per acre. I recommended him to apply gypsum, and he desired me to forward him ten tons, for a trial. When I again called on him, three years after, he said the land before mentioned, *by the application of gypsum*, instead of producing six to eight bushels of grain per acre, averaged 32 bushels of American barley, 36 of Chevalier barley, and 20 of wheat, per statute acre.

I beg further to observe, that gypsum, applied upon light or blow-away sands, in liberal quantities two or three times, turning over the soil and harrowing in, causes a body, and consequent adherence in the soil, which forms a basis or ground-work, so that it will ultimately retain manures bestowed upon it, which previously were washed into the bowels of the earth, without the least possible benefit to the crops. I can only re-

peat, that the application of gypsum to sandy land, if of genuine quality, and systematically worked into the land, would prove the greatest benefit to the agriculturist.

For Potatoes.—The following results of gypsum on potatoes, are furnished by the Rev. T. Skepworth, of Yorkshire:

"In a plot of land which had last spring been richly manured for early potatoes, we apportioned three rows for the following experiment: When the sets were cut, they were immediately dipped into powdered gypsum; they were then placed in the trenches, when a small portion of gypsum was sprinkled upon each set. The trenches were then filled up with earth, and a little more gypsum sprinkled the whole length of the rows, as a top-dressing. I am now convinced the top-dressing is much better applied when the tops are about two or three inches out of the ground, and very wet. This finished the process, in which, as nearly as we could calculate, we used about fifteen bushels of gypsum per acre. I must here state, that the gypsumed and ungypsumed rows immediately adjoined each other; but that if, as to the precise position of each, in point of free exposure to sun and air, there was any difference, it was in favour of the ungypsumed rows.

"On taking up, and carefully weighing off the produce of the gypsumed rows against the same number of ungypsumed, we had an extra produce from the gypsum of full 24 sacks, of 12 pecks each, per sack."

Second Experiment.—A plot of old swarth, was, last spring, broken up for potatoes. The greater part of the crop grew most luxuriantly; but the remainder, from being planted near the roots of some fruit trees, exhibited, in the spindled growth of their tops, a striking evidence of the exceeding poverty of the soil. The grower determined upon a trial of gypsum on this part, on which he applied a top-dressing. A gentle rain falling a few days afterwards, which put the gypsum into action, the effect was the astonishment of all who saw it—the gypsum seeming to impart an almost magic energy to these poor and puny tops; and in defiance of the extremely exhausted condition of that part of the soil upon which the experiment was tried, and the consequent backwardness of the crop, the gypsumed potatoes were amongst the finest in the plot.

The turnip fly.—A small farmer in my own parish, on whose statement I have the fullest reliance, sowed, this year, some rutabaga, upon a piece of rather strong land. No sooner had the plants arrived at their second leaf, than they were so voraciously attacked by the fly, that great numbers of the plants seemed entirely destroyed, and the rest to be rapidly following. There seemed, in fact, no prospect of saving the crop. Having, however, been informed that it was my opinion gypsum would destroy the fly, this person immediately top-dressed the crop, at eight bushels per acre—more, perhaps, than needful—and the consequence was most striking—the sudden and entire disappearance of the insect, and a most vigorous growth of the plants.

N. B.—The top-dressing for the fly, and indeed all top-dressings, should be fine gypsum, and applied either between showers of rain or in the early dew of the morning.

Every one extols, and justly so, the manure of the farm-yard; yet how few attempt to husband it as they ought. "Far-fetched and dear-bought" as some of our manures are, the farmer continues to buy, whilst he daily witnesses under his own nose the loss of most valuable manure. Ammonia is constantly rising from the stalls and dung-heaps, which might be *fixed* by gypsum. The urine is allowed to run anywhere but into reservoirs or tanks, and is soon dried up and lost.

Philadelphia Agricultural Society.

At a Stated meeting of the Philadelphia Society for promoting Agriculture, held at their Room, on the 4th inst., Dr. Mease, Presid't, in the Chair—16 members present.

Mr. Jacob Serrill, of Philadelphia County, was elected a resident member.

The Committee appointed at last meeting to inquire into the existing laws to restrain gunners from trespassing on farms, and destroying birds, in this county, &c., produced a paper, containing an abstract from the different acts passed by the Legislature in relation thereto, and were continued.

A Circular, and letter received by Mr. Gowen from Mr. O'Rielly, Secretary of the New York State Agricultural Society, was read, and referred to the Corresponding Secretary, Dr. Elwyn.

The Committee appointed to inquire into the causes of disease and rot in Potatoes, produced papers which were read, of a very interesting character on the subject.

On motion of K. Smith, Esq., a committee was appointed for the purpose of taking into consideration the propriety of offering premiums for the best Agricultural Essays, to be produced quarterly; and of publishing Memoirs of the Society.

Mr. Gowen read a paper, giving an account of a great yield of Wheat, in Cheshire England; the amount was 53 bushels of 70 lbs., on less than half a Cheshire acre; the ground had been planted with potatoes and

cabbage the year before, and had been trenched four feet deep. The same gentleman produced a large ear of white corn of singular appearance, bearing some resemblance to the Chinese corn; the grains were long and rather pointed at the top end: it was presented to him by Mr. J. Dupuy, who procured a few grains on board a ship at one of our wharves, supposed to be from South America, and had been cultivated by him for two or three years.

The Committee appointed to select a suitable room for a Reading Room for farmers, &c., made a report and were continued.

A white turnip weighing seven pounds was obtained by P. A. Browne, Esq., from Mr. Hoffner of this county, and presented by Dr. Mease. A. Clement, *Rec. Sec'y.*

Philadelphia, December, 1844.

THE FARMERS' CABINET, AND AMERICAN HERD-BOOK.

Philadelphia, Twelfth Month, 1844.

The second number of *Colman's Agricultural Tour* is well filled with matter of general interest to the farmer: we have used the freedom to transfer some of it to our pages, and should be glad if a greater number of the readers of the Cabinet were disposed to treat themselves to the whole of this valuable work. To the advantages of a thorough acquaintance with the details of agriculture, our traveller possesses a habit of close observation; and these render his remarks not only highly interesting to the curious inquirer, but practically instructive and useful. The continuation from last Report of the chapter on the *Allotment System*, will be read and pondered, both by the political economist of Great Britain, and the humane and considerate agriculturist of the United States. Much may unquestionably be done among ourselves to promote the comfort of the hired labourers on our farms. By putting under their care, at a moderate rent, an acre, or three-quarters, or a half, or even a quarter, of land, and showing them plainly how very productive their care and attention may make it, a benefit that will come directly home to the wife and the children, may be conferred, as well as one of a more general nature, indirectly felt by the neighbourhood.

The chapter on *Steeping Seeds*, we deem of considerable importance. More extended details in relation to this subject than are given in the Report, will be found in our numbers for the 7th, 8th, and 9th months last.

The *Model Farm and Agricultural School*, established by government at Glasnevin, near Dublin, is spoken of in terms of high approbation. Connected with it, are 52 acres of land, to the cultivation of which the scholars give about six hours a day, and devotethe rest to study. H. Colman visited the Institution, and by an examination of the accounts in detail, came to the conclusion that it was successfully and profitably managed. Since its establishment in 1838, it has sent out seven hundred teachers. The potatoes are said to average eighteen tons, or about seven hundred bushels to the acre, and the oats eighty bushels These crops certainly iudicate superior culture. "Happy is it for a country," says our author, "and honourable to human nature, when instead of schemes of avarice and dreams of ambition, and visions of conquest, at the dreadful expense of the comfort and liberty, and lives of the powerless and unprotected, the attention of those who hold the destinies of their fellow-beings in their hands is turned to their improvement, their elevation, their comfort, and their substantial welfare."

The Cattle Show and *Exhibition of the Chester and Delaware County Agricultural Society*, was held at West Chester, on the 22nd of Tenth month last, and we have understood was well attended by the farmers of that rich and highly cultivated district. The stock on the gronnd was such as might be looked for in that neighbourhood, showing that where the land is well cultivated, and constantly urged to yield yet more and more, the cattle, the horses, and the sheep, will not be likely to be neglected, either as respects their *keep*, or their *breeds*. Numerous premiums were awarded, and these, with the lively interchange of sentiment, and comparison of results, incident to our agricultural gatherings of this kind, will add new impulses to the farmers of Chester and Delaware, who have already the credit of being behind no other district in the country, either as relates to their industry, their good land, or their good farming. Joseph Burton was there with his fine Durham Bull, *Gladhow*, and carried away the first premium, as he did a few weeks ago, at our own Cattle Show at Germantown.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$4 00
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	60
Complete sets of the FARMERS' CABINET, half-bound, 8 vols.	6 50
DOWNING'S Landscape Gardening,	3 50
DARLINGTON'S Flora Cestrica,	3 00
RELIQUIÆ BALDWINIANÆ,	1 00
AMERICAN Poulterer's Companion,	1 25
BEVAN on the HONEY BEE,	31¼
BUISTS' ROSE MANUAL,	75
SKINNER'S CATTLE DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
JOHNSTON'S Agricultural Chemistry,	2 25
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions will be received for Colman's Agricultural Tour in England and on the Continent.

☞ We are prepared to bind books to order.

It would have been particularly gratifying to throw before our readers the whole of the Address of our worthy friend J. S. Skinner, at Wilmington, in the Ninth month last. Its length, however, made that impracticable; and the fact of its having been published in neat pamphlet form, in connection with the proceedings of the Society before which it was delivered, renders our inability to give more than extracts, the less to be regretted. The paragraphs given in the present number, in relation to the education of farmers, are of more than ordinary interest, and it is hoped will draw to the subject due attention. The proper bringing up of our sons, and adapting their education to the position in life they will probably hereafter occupy, is a consideration of the gravest character for the parent.

The New York State Agricultural Society, which has through its Recording Secretary, H. O'Rielly, so politely forwarded to us the last volume of its Transactions, as well as other volumes of a similar character, will accept our due acknowledgments. The preparation of this volume, and of those which precede it, really do great credit, both to the agriculture of New York and to those who have been active in the matter; and its publication by the legislature, is strong evidence of a proper appreciation of the labours of those, upon whose calling rests the true foundation of trade and industry. It shows also, that the legislature, while it is consulting the good of all, feels very forcibly the truth, that this good is generally best promoted by liberal expenditures for objects from which all, without exception, draw unnumbered benefits.

"Life in the Insect World; or Conversations upon Insects, between an Aunt and her Nieces." This is the title of a neat duodecimo, lately published by Lindsay & Blakiston, and we regret that the modesty of the author does not permit us to add her name. It is pleasantly written, and is well adapted to the information of children in this fascinating department of Natural History. Although apparently designed more particularly for the young, few of us who are older will read it without being agreeably instructed.

Saxton & Miles, of New York, have lately published "The American Poulterer's Companion: A practical Treatise on the Breeding, Rearing, Fattening, and general management of the various species of *Domestic Poultry*, with illustrations and portraits of Fowls taken from life: by C. N. Bement," one of the editors of the *Central New York Farmer*.

This volume, of nearly 400 pages, appears to contain almost every thing the poultry raiser need wish in his line; and the remarks and opinions of the writer are judicious and valuable: he shows himself to be no chicken in his business. We have heretofore expressed the opinion that if properly attended to and managed there is nothing to prevent poultry in this vicinity, from being among the most profitable stock of the farm. A couple of pairs of chickens will buy this book—and a single pair will buy the American Poultry Book. Every farmer should read them. They are for sale both at this office, and at Lindsay & Blakiston's.

In a notice of the Bucks County Agricultural Society, in our last number, a promise was made to give some extracts from the Address of Samuel D. Ingham, delivered on that occasion. They will be found on page 144. The Resolution at the foot of the extracts, shows a disposition to profit in earnest by the benefits of the Association.

All know that it is by little and little, the bird builds her nest, and the bee, her cell. Industry and perseverance will accomplish in time, far more than the unreflecting are apt to suspect. Farmers boys, for instance, who would spend a couple of hours these long winter evenings in some useful study, or in the reading of useful books, would accomplish in three or four months, what would surprise one who is accustomed to loitering away these quiet portions of the day without employment. Sixty hours in the month, saved from evenings, which might otherwise have been idly spent, would amount, in the course of a long winter, to as much time, and would enable a lad to accomplish as much as would several weeks' schooling. And the boy who will thus attend perseveringly to his own improvement, may rely upon it, that his increased intelligence will not only add to his respectability, but he will be all the better fitted for the active and responsible duties of life, towards which he is often impatiently looking.

In a note received from "A Constant Reader," inquiry is made respecting the cultivation of mustard seed for the manufacturer. The common black or brown variety—*Sinapis nigra*—is that which is commonly employed in the manufacture of mustard. It would afford much pleasure to throw all the light required upon this subject; for we regard it as one of considerable importance. We cannot, however, do much more than refer to the communication of C. J. Fell and Brother, on page 99, and to the *editorial* on page 102, of the current volume. He will there find allusion to the kind of soil best adapted to the growth of the plant—and where the seed may be procured. Well rotted stable manure, pretty liberally supplied, would doubtless make a good dressing, and we would suppose the ordinary time of putting in spring crops—say between oats and corn planting, would be seasonable for putting in the seed. The ground should of course be nicely prepared. What quantity of seed would be requisite for an acre, we can hardly form any definite opinion of. If put in drills a couple of feet apart—or as J. H Parmlee's appears to have been,—in hills, two feet apart one way, and one foot the other, it will be found necessary to tend it with the hoe—if ground be plenty, and the rows be three feet apart, the labour of cultivation may be lessened by the plough. Persons having experience in this matter, are respectfully invited to communicate it for the Cabinet.

Robert Hamilton, of Jersey Shore, left with us a small ear of remarkably beautiful white corn, which he raised from seed sent him from the Iowa mission, west of Missouri. Those who would like a few grains to plant, can have them by calling at the office.

PHILADELPHIA SEED STORE,

No. 23 MARKET STREET.

M. S. Powell keeps a constant supply of Clover and other Grass Seeds. Field Seeds, consisting of prime Seed wheat, Buckwheat, Millet, Oats, Corn, Rye, &c.

☞ GARDEN AND BIRD SEEDS generally.

July 15th, 1844. tf.

PHILADELPHIA AGRICULTURAL, HORTICULTURAL, AND SEED WAREHOUSE.

No. 194½ Market street, between Fifth and Sixth streets, South side.

For sale as above, at wholesale and retail, a complete assortment of Farming tools, among which may be found *Horse-powers and Threshing Machines, Grain and Seed Fans* of various patterns. *Corn-shellers* in variety. Hay, Straw, and Corn-stalk Cutters, eight different patterns, from $4 50 to $30. Corn-stalk Cutters and Grinders—Churns—Cheese-presses, &c. *Centre-draught Ploughs* of eight sizes. Bill-hooks—Bramble Scythes—Grubbing Hoes—Axes and handles—Hatchets—Potatoe Hooks—complete sets of instruments for making capons.

Garden, Grass, Flower and *Field seeds*, warranted fresh and true to name. D. O. Prouty.

POUDRETTE—a valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, N. Fourth street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels—$5 for three barrels—$15 for ten barrels, or thirty cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. We were entirely unable last spring to supply the demand, though it was then but an experiment in this vicinity. The results on corn have been generally very satisfactory. Early applicants will be most certainly supplied. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. Josiah Tatum.

We stated in the Cabinet two months ago, that Professor Emmons, of Albany, and Dr. Prime, of Newburgh, N. Y., proposed publishing an *American Quarterly Journal of Agriculture and Science*. A prospectus is at our office, and we will receive subscriptions with pleasure.

☞ SHORT ADVERTISEMENTS, ☜

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line.

The quantity of rain which fell in the the Eleventh month, (November,) 1844, was nearly three inches.

2.95 inches.

Penn. Hospital, 12th mo. 1st.

CONTENTS OF THIS NUMBER.

Geology of Soils, concluded. ..... page 137
Massachusetts Premium Farm. 139
A Dog Show.—Sore backs or Galls on Horses. 141
Landlord and Tenant.—Hints to Young Men. 142
Drilling Wheat. 143
S. D. Ingham's Agricultural Address. 144
Application of Steam to Agriculture. 146
C. N. Bement's Address before the Housatonic Agricultural Society. 147
Draining, Irrigation and Warping. 148
Extracts from J. S. Skinner's Ag. Address. 149
Pickled Eggs.—Extraordinary Calf. 151
Raising Potatoes.—Hints to lovers of Flowers. 152
Labour.—Take care of your Woodlands. 153
Autumn, by L. H. Sigourney. 154
Disease in Potatoes. 155
Report on Crops, Ag. Society Newcastle Co., Del. 156
Rotation of Crops. 158
In Farming, Manure is the principal thing. 159
Recipe to make Shoe-blacking. 160
Corn Crop. 161
Raising Wheat.—To wash Woollen Goods. 162
Continuance of Milk in Cows.—Hoven Cattle. 163
Butter.—Gypsum as Manure. 164
Editorial Notices. 166

THE FARMERS' CABINET,

IS PUBLISHED MONTHLY BY

JOSIAH TATUM, No. 50 NORTH FOURTH STREET, PHILADELPHIA.

It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For six dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the ninth volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage: that is, one cent on each number within the state, or within one hundred miles of the place of publication out of the state,—and one cent and a half to any other part of the United States—and Post Masters are at liberty to receive subscriptions, and forward them to the Publisher under their frank—thus affording an opportunity to all who wish it, to order the work, and pay for it without expense of postage.

Joseph Rakestraw, Printer.